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# Human Rights : A Marxist Approach

Shefali Moitra\*

Every society has upheld a set of rights and has tried to ensure them through some state system backed by law. This method of trying to enforce and ensure human rights, through the state machinery is followed both by the first world countries and the communist countries. Not only do the structures of the state machinery set-up by the first world countries and the communist countries resemble each other, they both use similar judicial, police and civil institutions to uphold and ensure human rights. Another common feature among all the nations is that the human rights that their state institutions propagate are more or less the same. However, in all cases a vast gap between precept and practice may be observed. While trying to analyse the human rights issue one will notice that both the communist and non-communist countries uphold the right to freedom, equality and security. The order of priority among these rights and their interpretation differ in different political systems. At this point one wonders at the cause of such a striking similarity in precept and practice of human rights found in the first world and communist countries when their political systems are so different. This similarity is to the extent that both groups of countries feel it worthwhile to open a dialogue and exchange views on human rights at the international level. This seems a strange situation because when one reads Marx's written works one gets the definite impression that Marx never championed the cause of human rights as are being discussed across the international conference tables. This was not because Marx saw man as a mere cog in the wheel, having no freedom or identity, nor because Marx did not uphold some set of human needs. Marx thought that man's freedom security or values cannot be enhanced by granting him certain rights. Human rights no matter how they are interpreted or formulated stand in the way of realizing freedom and other human values in the Marxian sense. The desired goal according to Marx can only be achieved by replacing the concept of human rights by the concept of human needs.

The present paper will be presented in three parts. The first part will be an attempt to clarify Marx's position on 'human values'. This

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attempt will proceed in a negative way by showing contrary to popular belief what Marx did not hold. Here it will be noticed the expression 'human values' has been indiscriminately used in place of human rights or human needs. This is not a happy substitute but before clinching the issue between rights and needs the expression 'human values' is thought to be relatively unambiguous. The second section of this paper will be devoted to showing the basic difference of approach to the human rights issue in the first world countries and how this view does not and cannot correspond to nor complement the Marxist view on the issue. The third section will be an attempt to briefly show how Marx would explain human needs and how they are to replace human rights in a future society.

In this paper examples will not be drawn from communist countries since there is a controversy regarding which of them gives a proper representation and whether any of them do. Most of the quotations in this paper are taken from early Marx not with an idea of ignoring later Marx but because the views that have been cited have not been contradicted by later Marx to my knowledge. Libraries have been written on Marx's economic and political thought while his views on 'human values' have been miserably neglected. There is much pamphleteering literature with an eye to propaganda whereas little has been written in the way of serious analysis of Marx's ethics. There is monograph on Marxism and Ethics, by E. Kamenka<sup>1</sup> which does not touch on the human rights issue and needs to be substantially supplemented to get a clear picture of Marx's views on ethical values. The aim of this paper is to represent Marx's position on the problem of human rights and in the process to deal with some of the related ethical, political and judicial issues. The novelty of this programme lies in gleaning Marx's scattered insights on this problem and trying to give a coherent philosophical interpretation of his view, a neglected task which deserves serious attention.

## I

Strangely enough two thirds of the world's population profess to be committed to Marxism yet few seem to be concerned with the Marxist system of ethical values. Here it will be helpful to keep in mind a distinction between ethical values and moral values.<sup>2</sup> The importance of the former has been acknowledged in Marxism while the latter has been abhorred. Moral values are the result of man's artificial reaction to his inhuman conditions and are not the outcome of his 'true human nature', they are not invoked by any artificially projected standards. Expressions such as 'true human nature' or concepts such as 'artificially projected standards' need to be explained.

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Seldom does one find such typically Marxist concepts being elaborated on. Clarifications such as how is one to know one's 'true nature', is human nature discovered or created and again how is one to stay free of artificially projected standards and so on need to be given. Most Marxists seem to have a markedly callous attitude towards the need for such clarifications. One explanation may be the common Marxist belief that the capitalist system of production and distribution is the sole source of disvalues and moral confusions, therefore, as soon as that system is replaced by a new economic system, a ready-made set of ethical values will automatically be established. Accordingly the problems raised above will be automatically clarified at a later time in history. Nothing could be further removed from Marx's viewpoint. Nowhere does Marx say that a search and/or establishment of ethical values should be suspended till a communist revolution takes place nor does he say that with the success of politico-economic revolution the desired ethical values will automatically come into being. The misconception that the replacement of moral values by ethical values is necessary result of successful revolution is based on two false premisses. The first false premiss is that the liberation from an oppressive State order will lead to the liberation of each member of the state. The second false premiss is that the equal distribution of wealth will create a world brotherhood which will automatically usher in a desired system of ethics.

Let us take up the first premiss. A restructuring of State order into a communist State will not necessarily bring about the desired establishment of ethical values. A change in the structure of the State is a necessary condition for fully practicing ethical values but it is not a sufficient condition. This point will be amply borne out by those States which have communist governments. For the establishment of the cherished Marxist ethical values an effort has to be made on two levels: (a) the State level and (b) the individual level. On the State level the mode of production and distribution has to be changed along with the supporting institutions. But this is not the only stumbling block. Even after a change takes place at the State level the individual continues to live in the cultural ethos of his ancestors. Men cannot be transplanted into a new system of values through a sudden revolution. The new system of ethical values will have to be acquired through a difficult and gradual path finding, by overcoming one's hangups from the prerevolutionary stage which lingers like the memories of a nightmare. Emancipation from an oppressive State order without emancipation from its correlated cultural ethos will merely shift the source of oppression from one set of insti-



tutions to another set of institutions. A political revolution brings about a change in the State institutions ( army, police, judiciary, administration, bureaucracy ) while leaving the civil institutions ( churches, schools, unions, political parties ), the bearers of culture and value unchanged. The main difference between State institutions and civil institutions is that the former are organs of coercion whereas the latter are founded by consent. The process of changing civil society is slow and laborious. Moreover every change in the State institutions do not bring about changes in the civil society. History has any number of examples where a change in the State order has been kept at bay by civil society. Intellectuals of a society have a decisive role to play in changing civil society and bringing about a cultural revolution. To quote Marx :

The limitations of political emancipation are immediately apparent from the fact that the *State* can liberate itself from a restriction without man himself being *truly* free of it, that a State can be a *free-State* without man himself being a *free-man*.<sup>3</sup>

The hierarchical system we live in today dates back to the beginning of civilization. What Marx envisages as a communist society is something which wholly belongs to the future. Throughout history the political systems of every country have undergone extreme changes while retaining their hierarchical character. Man's values have remained more or less faithful to this status quo generating system. Values thus generated would be labelled as moral values by Marx. For the establishment of ethical values a unilateral struggle against an inhibiting State order will not suffice a collateral supportive movement at the level of civil society is also needed.

Now to come to the second false premiss. This premiss has two clauses the first emphasizing the need for the equal distribution of wealth and the second emphasizing the establishment of universal brotherhood as a prerequisite for the establishment of ethical values. The corollary to this premiss is that as soon as the wealth is taken from the rich and distributed among the poor there will be no economic hierarchy, consequently each will treat his fellowbeings as brothers. Under these changed circumstances it is thought that there will be no economic offences and there will be an ideal fellow feeling which will lead to the realization of the cherished ethical values. This is not a faithful interpretation of Marx's own position. As is well known Marx never saw the economic problem as one of distribution alone. Production and distribution are two sides of the same coin. Therefore by paying heed to the system of

distribution without disturbing the system of production will not lead to Marxian ideals. To begin with, the constraints of realizing ethical values are not merely a wrong distribution of wealth and a lack of fellow feeling. By treating one as one's brother one does not cease to treat him according to the traditional precommunistic concept of brotherhood which is detrimental to the norms of a Marxian society. Moreover, it is also unnatural to feel a kinship identity with every human being. To force one to think so, will be to curb one's independence which will be basically against Marx's sense of 'truly human values'. The motto of the Communist League before 1847 was "All men are brothers". Engels insisted that this motto be changed to "Proletarians of all countries unite" and Marx held the view that there were a whole lot of men whose brother he never wanted to be.<sup>4</sup> Before the communist revolution the purpose of denying brotherhood to some is to avoid confusing a friend of the movement with a foe and also to avoid male chauvinism. Once the new society is formed the universal brotherhood concept should remain a taboo since it has hierarchical nuances such as elder brother, younger brother and so on. Brotherhood stands for some strictly defined relationship which has little room for alteration. In a socialist society it would be better to think of human relations in terms of friendship relations and a love relation in the broader sense of the term. Since friendship has no institutional definition, it is rather a consciously evolved relationship which evolves according to the needs of the human beings concerned and the circumstances they are in. Friendship has to be both consciously attained and consciously maintained. Therefore this relationship suits a Socialist society better where the existing State and civil society are restructured with a view to replace them not with another prefabricated static set of values but with values which are suited to the present and can be changed for the future. Needless to say the post revolutionary society provides a conducive setup for developing friendship relations in a wider context.

The first clause of the latter false premiss relates to the concept of economic equality. That Marx spoke of levelling incomes by subtracting from the rich and adding to the income of the poor is a very common misconception. Marx loathed the method of equalization<sup>5</sup> firstly because this remedy merely touches on the distribution system without changing the production system. Secondly, he calls this a form of crude communism which manifests man's envy and greed. Actually this concept of equalization is a form of disguised competition in which one tries to bring the standard down to suit one's own condition instead of competing for the place at the top. Marx thinks

this to be a form of unnatural simplicity which negates culture and civilization. Thus neither the equal distribution of wealth according to a pre-conceived minimum nor the heralding of universal brotherhood will bring forth the desired ethical values. Therefore, the complacency with which one may reason, that, what needs to be looked after are the economic and political issues while the ethical issues will be resolved on their own is totally unfounded.

As has been maintained earlier Marx feels that the society in which ethical values can really be experienced is yet to be created. Never in history has man lived a creative life free from abstraction, another name for which is alienation. Man is nevertheless capable of living free from abstraction. Till man reaches the stage of being free from alienation, his history is known as pre-history. Man's real history has not yet begun. By trying to overcome alienation man is not trying to go back to a primitive stage of history. Here Marx is not taking the stand of Rousseau by saying primitive man lived a life of bliss--a life which has been totally corrupted by politics and history. The world of ethical values is not a paradise to be regained but a paradise to be created. Marx does appreciate much that is found in an ancient civilization but at the same time asserts that the past cannot be relived. The truth of each epoch has to be reproduced at a higher stage of history. This point has been put forth with deep passion and sensitivity by Marx in the Introduction to his *Grundrisse*. To quote Marx :

Why should not the historical childhood of humanity, its most beautiful unfolding, as a stage never to return, exercise an eternal charm.<sup>6</sup>

In this way every stage of history has to be evaluated and the values transformed into a higher expression. The 'truth' that is to be recognized in each epoch is not eternal but a product of history.

As has been clear from the discussion so far Marxism is a form of process philosophy. Therefore, no one point in history can be taken to be the full expression of Marxism. All that can be attempted is to ascertain whether the history under analysis is a form of pre-history or a form of human history. While trying to adjudge the place of communism in human history, one is in a quandary regarding its status. Althusser's remarks on this problem spells out the same anxiety. "Any way even our own experience should remind us that it is possible to be a 'Communist' without being Marxist".<sup>7</sup> Even from Marx's own writings it is difficult to understand his grading of a communist society vis-a-vis ethical values. It seems reasonable to interpret him as saying that communism is a necessary step to the realization of human values but not the final step. Human values are realized at a later stage

than communism. Communism as practised today seems to be a transitory stage between pre-history and human history. A Quotation from early Marx will substantiate this view. Marx writes :

Communism is the necessary form and the dynamic principle of the immediate future, but communism is not as such the goal of human development the form of human society.<sup>8</sup>

This quotation further justifies the author's confinement to Marx's own works and avoidance of concrete examples from history.

## II

The main approach of the history of thought to the 'identity of man in respect of values has been of two types, namely, the deterministic and the empirically derived. The empirically derived can be further subdivided into (a) the historico-empirical and (b) the a-historico-empirical. As representative examples of this group one may name Kant, the Sufis and the Vedantins as determinists ; Mill and Rawls as a-historico-empiricists and Marx and Bergson as historico-empiricists in respect of values. As will be evident from the labels the determinists are fundamentally concerned with the 'metaphysic of morals' whereas, both the a-historico-empiricists and historico empiricists derive their value structure from experience. The a-historico-empiricists have treated empirically derived values as being more or less static, consequently a status quo of values is maintained in spite of major and minor social changes. For this group of thinkers the structure of moral values remains unchanged e.g. the structure upholding 'the greatest happiness principle' or the structure upholding 'the maxi-mini principle', within this structure changes based on empirical grounds do take place. These changes may be instigated by individuals or by institutions.

So it seems the a-historico-empiricist maintains an overarching static structure of values within which a dynamic process of value practice takes place. The execution of practice, however, is very cautious always having an eye on maintaining the value structure, that is in maintaining the status quo. To use a Marixst jargon this is a system of *closure*. The a-historico value schema is like a structural whole within which process is encapsulated.<sup>9</sup>

The historico-empiricist on the other hand accepts that the standard of ethics is derived from experience and therefore, will change with changes in history. These changes will take place not only in individual praxis but also in the overall value structure. For thinkers like Bergson this change is totally unpredictable whereas for Marx the change will be one of structured process. Thus we have stated three mode of interpreting ethical values. They are the deterministic mode,

the mode of ethics as the preserver of empirically derived values and finally the standard as being subject to a continuous process.

Marx discusses the human rights issue in the context of a socio-political system. For him the discussion of human rights or any other ethical problem in isolation is a task in futility. Here one cannot fail to mark the radical difference of approach of Marx and traditional philosophers like Kant. Kant represents the other extreme where man's socio-political or geo-political environments are taken to be nonconsequential for any ethical discussion. In *The Groundwork of Metaphysic of Morals*, Kant describes the 'kingdom of ends' as an aggregate of rational agents who do not communicate with each other in any essential way.<sup>10</sup>

Between the conservative attitude of Kant and the radical approach of Marx lies the liberal Utilitarian tradition dating back to Aristotle and finding its modern exponents in Bentham, Mill and Rawls. In the liberal tradition the relation of socio-political conditions to ethics is acknowledged only in a limited way ; namely, in the sphere of the dispensation and distribution of goods alone. The liberals hold that the mode of production in human society is guided by immutable laws of production. One such necessary law of production is the existence of private property. From this thinkers like Mill conclude that production is not possible without *private property*. It was also thought that since the basic laws of production were unchangeable a moral philosopher should only be concerned with prescriptions for distributing the wealth thus produced. Aristotle, Mill and Rawls to name a few such thinkers give different prescriptions for distribution. Aristotle speaks of justice as the criterion of distribution. 'Just' is the mean between two disputing parties.<sup>11</sup> Mill prescribes 'prudence' as the criterion for the distribution of wealth. Whereas, Rawls prescribes the 'game principle', by which every receiver calculates how they can achieve the maximum gain with the minimum sacrifice. This principle does not work out very well for no one would like to sacrifice their gains rather than try for pure gains. Here Rawls brings in the mystifying concept of 'the veil of ignorance' which leads him into irretrievable difficulties. Rawl's theory as is well known is a sophisticated version of Mill's theory of Utilitarianism. Marx's objection to Aristotle's theory of 'justice' and Mill/Rawl's theory of distribution will be discussed later in this paper. Marx's major departure from the utilitarian school of economics is that he feels that both production and distribution are intimately connected and that a theory of distribution must necessarily include a discussion of the modes of production. The human rights issue is primarily related to the mode

of production. To quote Marx :

"every form of production creates its own legal relations".

Marx is often misunderstood to be taking wealth and its distribution as the determining factor for human identity. The economic image of man is to be found in Mill and other utilitarians. This is the image of man put forth by those who see man as a "utility maximizer" or as one who uses all one's capacities for the most efficient allocation of the existing scarce resources. This is the economic and prudential effort of 'cutting one's coat according to the cloth'. By this philosophy added security is desired with increased consumption. Marx describes this tendency as the 'fetishism of commodities'. Instead of speaking of man's identity in the economic image Marx speaks of man/woman identity as 'species being' (*gattungswesen*), a discussion of species identity will be taken up in the third section of this paper. It will suffice to observe for the present that the search for human identity as a *species being* will entail the preparedness to forego all conservative forms of security. For what is sought after is not security in an antagonistic, determined and scarcity ridden world ; what is sought is freedom even at the cost of security if necessary. This representation of Marx's view of *species being* as being primarily a freedom seeking being and not a security oriented being has been ratified by able thinkers like K. Popper<sup>12</sup> and E. Kamenka.<sup>13</sup> The nature of man has been conceived by philosophers in two opposite images (a) Man as a loving sympathetic co-operative animal e.g., Rousseau, Rabindranath and Gandhi's image of man ; (b) the Freudian image of man as 'man is a wolf man' ( *homohomini lupus* ). The second image of man has been adopted by the Utilitarians, who think of man as an atomized mutually competitive individual. Marx accepts this first representation of man's nature.

Marx finds the existing social order an unbearable constraint to man's freedom and his spontaneous self expression. The present social order brings into sharp contrast man's 'pre-history' with 'human-history'. Thinkers like Mill, Popper, Oakshott and Neibuhr discard this Marxian approach of 'Promethean ethica', they feel man's values can be realized without radically changing the social order. Their approach has rightly been termed by R. P. Wolff as a 'prudent mediocrity'.

So long we have laboured hard to tie up many of Marx's ideas on issues which are directly related to the human rights issue and without which it would be impossible to directly come to the question of human rights. The title of this paper may seem to promise a list of human rights accepted by Marx and ways of achieving them. Surpri-

singly enough nothing of the sort will be found in the course of discussion. On the contrary through a discussion of the traditionally accepted human rights it will be shown why Marx thinks the entire issue to be a part of pre-history which will be transformed in the period of 'human-history.' In human-history the concept of right will be replaced by the concept of need.

Concern with the fundamental rights of man came into vogue with the American war of independence and the French revolution. The fundamental human rights were liberty, equality and security. These rights were recognized by the revolutionaries/rebels in America and France and the new laws and constitution in those countries were written in a manner to ensure these human rights. The State was entrusted with the political power of being the guardian of rights. At this stage of history the split between civil society and political society was sharply demarcated. All the cherished values of man were theorized and enshrined in the constitution and the elected representatives of the people were made the guardians of these values. The State administration and the judiciary were formed to protect human values. These institutions were run by the bureaucrats. These bureaucrats in spite of being nominated guardians just used the name of the common weal to further their own interests. This section of bureaucrats in time became a caste. Consequently the word of the constitution—and the administration of its dictates started serving cross purposes. The elected body and the electorate no longer had the same privileges. Repeated elections do not solve the problem since elections merely have the illusion of satisfying the popular demand. Political society thus professes a general interest in co-operation and equality but these are just masks for their egoistic competitive interests. So in the modern State man has the right to do what he likes so long this does not clash with the pleasures of the elected bureaucrats. The unwanted consequences of elections is not a pointer to Marx's aversion to elections. Suffrage in many societies was welcomed by Marx and even thought to be a way of heralding a new society. What Marx was against was 'democratic values'. In a democratic society bureaucrats play a major role. In such societies man lives under dual standards where the State theorizes man as being co-operative and in practice treats man as if he is an atom which uses other men as means. This unfortunate dual standard is the result of trying to revolutionize values without changing the mode of production. The American and French societies thus set up societies in which the basic human right to freedom meant freedom 'of' and not freedom 'from'. To quote Marx :

Hence man was not freed from religion—he received the freedom of religion. He was not freed from property—he received the freedom of property. He was not freed from egoism of trade—he received the freedom to engage in trade.<sup>14</sup>

The problem was and is that the civil society is ridden with all sorts of hierarchies, whereas, the standard of values upheld by the corresponding political society are uniform. Rights can only be formulated if there is an equal standard. When society nurtures inequalities and imposes equal standards, this can be regarded as a form of equalization and not equality. In spite of this apparent equalization what will be reflected in the rights is the inequality of society. As Marx says: "Rights can never be higher than the economic structure of society and the cultural development conditioned by it."<sup>15</sup> Equality in the true sense should try to overcome social inequalities while recognizing individual differences. Marx emphasizes that there are individual differences and these differences must be taken into account in any discussion on equality. The Marxian notion of equality is "from each according to his ability to each according to his need". This notion of equality is threatening to any State which flourishes on a distinction between the ruled and the rulers, between we and they. The right to equality when traditionally understood transpires as 'all men are equal ; some men are more equal than others'

Finally, the right to security was championed in order to enable one to secure the right to 'freedom' and 'equality' in the non-Marxian sense. This security can be given only through police protection supported by a theory of justice. Trying to attain security through an external force shows man is still in the stage of history when he is not creating history but is a creature of history. As Marx says: "The concept of security does not enable civil society to rise above its egoism. On the contrary, security is the guarantee of its egoism."<sup>16</sup> Thus we find in the first world countries such as America and France human rights are dispensed by the elected guardians of the constitution. This firstly leads to a dual standard between the guardians and the ruled. Secondly human rights are designed and understood in a way which emphasizes man's competitiveness and not his co-operativeness. The need to co-operative is felt by these countries but it is thought that man is not spontaneously co-operative, he has to be coerced into co-operation by the State.

The first world countries entrust the judiciary with the duty of insuring human rights and avoiding confrontation. Marx finds their explanation of human rights dehumanizing and the corresponding judicial system as retarding and superfluous. The corresponding



judicial system in the first world countries are either distributive or retributive, both are based on the concept of a stratified society. The concept of dispensation is always an artificial concept borne out of a hierarchical society. This social stratification dates back to Plato's *Republic* or even earlier. Under the influence of Utilitarianism the concept of 'fairness' has been added to the concept of 'justice'. The motto is "the greatest good of the greatest number". In practice this implies the best distribution of the dispensable goods from the least number. This theory of justice has been formalized in different ways in recent times as "Rational decision",<sup>17</sup> "Normative action",<sup>18</sup> "Legalistic principles"<sup>19</sup> and so on. Justice is not something to be distributed. Distribution generally takes place in the context of goods. Marx points out that even goods are not to be distributed but shared according to the needs of the people. The concept of justice as retributive is upheld only in primitive societies, where a community of people is under the influence of a king, a leader, a miracle man, an alchemist or a wise man or the elite of a so called democratic society. Marx will say a society dependent on justice is not a completely *human* society. In a truly *human* society the community will be functional; they will produce, create and co-operate in consonance with their species nature.<sup>20</sup>

While functioning in consonance with the *species nature* the need for freedom, equality and security will arise but they will not arise as rights. What is conventionally understood as the traditional concept of right depends on strict individuation, stratification which leads to artificiality. An artificiality which is sustained by a breach between theory and practice, where the theory is the theory of right and the practice is one of the dependence and subservience. To bridge the gulf the distance between the 'we' and the 'they' the ruler and the ruled has to be overcome. The society will have to be based on co-operation and not competition. In competition man is treated as an atom whereas in co-operation man's individuality is recognized along with his capacity to work co-operatively. Thus we find that what Marx seeks is not the assertion of human rights but the change of society where the artificial human rights can be recognized as human needs. Some may feel that the needs which are supposed to replace conventional rights are nothing but another form of rights. Here it will be judicious not to use the right for both explanations since the two differ radically and the establishment of one requires the destruction of the preconditions for the other and vice versa. This is what makes one wonder how there can be an exchange and compromise of views between these two opposite philosophies. To take the attitude that

all roads lead to Rome and all great philosophies say more or less the something will not be a correct assessment of the human rights issue as seen by the first world and communist countries. In the third section an attempt will be made to give a very brief exposition of needs as understood by Marx and the social pre-condition regarding the very basics should be apparent. The replacement of rights by needs is only possible in a future society where the political life is not estranged from the civil life ; a society which is the result of a total structural change – a Promethean ethics.

### III

Marx feels that the present form of production is detrimental to the fulfilment of human needs. The present system leads man to see each other as the limitation of their freedom rather than as a realization of their freedom. In the present system man's individual needs come in sharp conflict with his species needs. This conflict could be avoided. Marx firmly believes that man could produce in a way which would not only express his individuality but at the same time fulfill some species need of a fellow being. In this way each act of production could be an expression of his individuality as well as a mediation in the realization of another's species being. "Our production would be as many mirrors from which our natures would shine forth."<sup>21</sup>

The expression 'species being' needs explanation. Though man and animal are both parts of nature and both have a *life activity* the differentiating factor is that animals have *life activity* whereas man has a *conscious life activity*. This *conscious life activity* is what makes man a species being. The expression *conscious life activity* also needs to be clarified. The discussion of consciousness will draw our attention to Marxist psychology which is dynamic in nature and therefore opposed to any kind of behavioristic interpretation. 'Marx saw like Freud that consciousness is the product of the particular practice of life which characterizes a society or class'<sup>22</sup> In his *German Ideology* Marx writes "It is not consciousness that determines life, but life that determines consciousness". It is through consciousness that man expresses his relation to the world and to other man. By the term 'life' in *life activity* Marx means social existence and by 'activity' he does not mean ordinary activity. By activity is meant a non alienated drive. This activity is different from animals who only create according to their species needs to which they belong. Through life activity man creates according to the appropriate standard of the object which is also according to beauty. By estranged labour *conscious life activity*

is abstracted and man's spontaneity is curbed by transforming him into a mere tool for existence.

In the stage of pre-history man's life activity is abstracted. This abstraction takes place at two levels and leads to inevitable gaps; gaps between man and society, civil society and political society, theory and practice and so on. Abstracted life activity, however, does not degenerate man's existence into a level of animal existence, the reason being that man's activity is always decisional, but animal activity is not. This decision to give in to a system of estranged labour is dehumanizing according to Marx—because this process transforms man into a means instead of recognizing him as an end. Rawls observes this same transformation of free man into a limited human being but interprets the decision to do so in a different way. For Rawls the decision is part of a game or strategy by which men enter into a contract to allow themselves to be used and their freedom to be curbed. By this contract man arrives at a strategy by which he can attain maximum gain with minimum sacrifice. In this way man strives at achieving maximum freedom without foregoing any security. True, in the present social context this would be the most prudent way to act but it would not be the expression of maximum freedom. It has been mentioned earlier that if a choice has to be made, Marx will opt for freedom at the cost of security. The present system into which man's *life activity* is estranged in a system built on a mode of production which leads to such estrangement. This mode of production has been perpetuated for the convenience of some.

The ushering of Promethean ethics depends on being able to free man from estranged labour and allow him to direct his efforts towards the fulfilment of human needs that grow out of such freedom. Marx speaks of two types of needs: genuine/creative and imaginary. The fulfilment of the former leads to the expansion of human creativity, whereas the latter leads to further servitude to the institutions that generate imaginary needs. Here creativity should not be confused with efficiency. Efficiency is a product of division of labour and suits the present mode of production very well. Efficiency is the effect of habitual repetition of fixed means for the attainment of an end with an aim to achieve haste and exactitude. Creativity also needs exactitude but not at a cost of self expression. Efficiency requires total submission to exactitude. In efficiency the rules are master, whereas in creativity man is the master of the rules. Spontaneity is the major factor in creativity, a factor which is totally ignored in efficiency. An efficient action is done under estranging conditions where one does not act as an independent conscious agent. Freedom from estrange-

ment provides conditions to act as a free agent. Imaginary needs and estranged labour jointly deprive man of freedom and security. Once man's labour is estranged, he is exclusively determined by conditions outside himself. Thus he loses all responsibility and all freedom. Thereby he tries to achieve both freedom and security by the help of external agencies such as the judiciary and the police.

Private property seems to be the major source of estrangement and the foremost constraint in the way of man's being able to recognize his creative/human needs. Private property does not know how to transform imaginary needs into *human* needs, the reason being that existence of private property is supported by the philosophy that for man's maximum development his individuality should be increased and his relatedness be kept at its bear minimum. As opposed to this atomic image of man, Marx's image of man is based on the primacy of man's *relatedness* to the world, to man and to nature. Human needs therefore cannot be fulfilled by isolationism according to Marx. Isolationism is supported by private property, division of labour and Freudian explanation of man as *homo machine*. Man's need is to be related to man and nature. The aim is to accomplish the union of man with nature 'the realized naturalism of man and the realized humanism of nature'. Therefore the more developed a man will be the more complex will be his man—man and man—nature needs. Capitalism flourishes on further compartmentalization and specialization, whereas, Marxism calls for expansion of *conscious life activity* through more participation.

There is a close connection between consciousness and ideology. As is well known, religion, ethics/morals are part of the super-structure or ideology which is supported by the productive structure. Just as the productive or the social structure changes ideology, it also influences man's consciousness. The political society creates all sorts of illusions to sustain man's false consciousness. Religion is one such illusion used by the ruling class. Projected moral values are another set of illusions which do not reflect 'man's conscious life activity'. Marx clearly says 'the demand to give up illusions about one's condition is to demand to give up conditions which need illusions'. All men are not willing to try and achieve an illusion free consciousness which makes man aware of his species identity. To put it in Marx's own words :

.....Instead we shall simply show the world why it is struggling, and the consciousness of this is a thing it *must* acquire whether it wishes or not.

The reform of consciousness consists *entirely* in making the world aware of its own consciousness, in arousing it from its dream of itself, in *explaining* its own actions to it.<sup>25</sup>

The Utilitarians try to increase man's imaginary needs and are thus often labelled "utility maximisers" the process of increasing such needs is self defeating. To quote Marx :

Every new product is a new potentiality of deceit and robbery. Man becomes increasingly 'poor' as man. .... This shows subjectively, partly in fact that the expansion of production and needs becomes an ingenious and always calculating subservience to inhuman, depraved, unnatural and imaginary appetites. As a result.....the production of too many useful things results in too many useless people. Both sides forget that prodigality and thrift, luxury and abstinence, wealth and poverty, are equivalent.<sup>21</sup>

Marx speaks of the maximizing of ones creative needs, such as the need for non estranged freedom, security and equality and, not needs that arise out of false consciousness. Man is both a subject and a creator of history. Unlike plants and animals man's needs are not only those which grow out of a 'dependence' on nature : he also has needs which grow out of his 'demands' on nature. Marx sees the future where man and nature will be co-operating in a single programme as inevitable. The question which comes to mind here is whether this future stage in history will follow the present in a smooth process or will change take place by leaps and bounds. As a process philosopher, Marx does accept the theory of biological evolution, though not in the form expounded by Darwin. Marx fully accepts Hegel's dialectical theory of the inevitability of leaps in the process of species development. History is more or less predictable, though real accidents do take place. Apart from real accidents, what once seems necessary may later seem an accident. It is mentioned in the *German Ideology* that after the revolution the present necessity of the isolation of the individuals and private gains will seem an accident.<sup>22</sup> Here the explanation of social change in Marxist sociology is intentionally being avoided since it has been discussed by thinkers like E.P. Thompson in his *Poverty of Theory*<sup>23</sup>

The second question which may come to one's mind is, 'how is the progress in history vis-a-vis needs evaluated ?' An answer will be attempted at without going into the vast discuss on on alienation. A simplified answer would be to reply that historical progress is to be judged by the extensity and intensity of man's relatedness to man and to nature. Marx says 'it is love which teaches man to truly believe in the world of objects outside of him.' Marx believes 'the relation of man to woman is the most natural relation of human being to human being.' What Marx envisages for Promethean ethics seems an extension of a love relation between man and woman. Man approximates the fulfilment of creative needs to the extent in which he is expressing his

own personality and simultaneously helping in the expression of his partner's species needs, by being a mediator between him/her and his/her species needs.<sup>27</sup> This will be a society where each will be wedded to the other in common species relationship and all will feel a common identity in a 'National' relationship. Creative needs are closely connected with relatedness at the same time these needs are also closely connected with a social dynamism and the mode of production. All these form a complex whole which has to be understood in its entirety in order to understand historical progress. Mere love for man or love for nature will not bring about Promethean ethics or the expression of creative needs; a supporting progressive economic system must also be formed. This important point was overlooked by Herbert Marcuse during his leadership to the students of Berkeley.

Thus the discussion on human rights may be summed up with the following observations. Those who support human rights express them in such a way that they pre-suppose the atomistic image of man which is diametrically opposed to the Marxian explanation. Marx believes that Man's drives are expressions of a specifically human need to be related to man and nature. Human rights are neither identical with nor complementary to needs. Human rights are rooted in a competitive productive system while creative needs require a co-operative productive system. Marx's whole aim is to show the draw-backs of a competitive system and its supporting illusions and to all for a new human history. Here is where the question raised at the very beginning re-appears, 'how can a Marxist support and vitalize the human rights movement when its entire philosophy aims at uprooting this ideology along with its underlying system of production?' The terminology for cherished values for the Marxist and the human rightists are the same, namely freedom, equality and security, but they are speaking at cross purposes. They are speaking of diametrically opposed sorts of freedom, equality and security rooted in mutually opposed productive systems.

#### NOTES AND REFERENCES :

- 1 E. Kamenka : *Marxism and Ethics*, MacMillan & Co., 1969.
- 2 *Op. Cit.*, pp. 20-21.
- 3 K. Marx : "On the Jewish Question", 1843, in *Karl Marx : Early Writings*, trans by R. Livingstone and G. Benton, Penguin Books, reprinted, 1977, p. 218  
Also see 'The role of intellectuals' and 'The concept of Hegemony' in *Selections from the Prison Note Books of Antonio Gramsci*, ed. and trans. by Q. Hoare and G. N. Smith, International Publishers, N. York, 2nd. ed. 1973.

- 4 cf. Introduction, *Marx and Engels : Basic Writings on Politics and Philosophy*, ed. by L.S. Ferver, Fontana, 6th Impression, 1976, p. 19.
  - 5 Vide, K. Marx : "Economic and Political Writings" in *Karl Marx Early Writings*, *ibid.* p. 346.
  - 6 Karl Marx : *Grundrisse*, trans. by M. Nicolous, Penguin Books, reprinted, 1977, p. 11.
  - 7 Louis Althusser : *For Marx*, trans By B. Brewster, Penguin Books, England, 1969, p. 160.
  - 8 K. Marx : "Economic and Philosophical Manuscripts" in *Early Writings of Karl Marx*, *ibid.* , p. 358.
  - 9 Vide, E. P. Thomson : *The Poverty of Theory and Other Essays*, The Merlin Press Ltd , 1978, 2nd impression, 1979, P, 290.
  - 10 Vide, R.P. Wolff : *Understanding Rawls*, Princeton University Press, 1977, p. 179.
  - 11 The word 'just' is synonymous with the word '*dichaiton* or *dicha* meaning in-half. Thus the word *dikastas* is synonymous with 'judge' that is the divider, Vide : J. A. K. Thomson, trans *Aristotle : Ethics*, Penguin Books, 1966, p. 149.
  - 12 K. Popper : *Open Society and its Enemies*, Vol. II., London, 1957, p. 199.
  - 13 E. Kamenka : *Marxism and Ethics*, *ibid.*, p. 8.
  - 14 "On the Jewish Question" in *Early Writings : Marx*, ed. by Lucio Colletti, Penguin, 1977, p. 233.
  - 15 "Critique of the Gotha Programme" in *Marx and-Engels Basic Writings*, ed. by L. S. Ferver, Fontana, 6th impression, 1976, p. 160.
  - 16 "On the Jewish Question", *ibid.*, p. 230.
  - 17 J. Raw's
  - 18 Von Wright
  - 19 G. Gottlieb
  - 20 I am indebted to an informal discussion with Late D. S. N. Ganguly in 1975 for the points dealt with in this paragraph.
  - 21 "Excerpts from James Mill's Elements of Political Economy", in Karl Marx Early Writings, *ibid.*, p. 278.
  - 22 For a detailed discussion see E. Fromm, *The Crisis of Psycho-analysis*, Penguin Books, England, 1973.
  - 23 K. Marx : Letters from the *Franco German Year Books*, (1843) reprinted in *Early Writings of Marx*, *ibid.*, p. 209.
  - 24 K. Marx : Letters from the *Franco German Year Books*, (1843) reprinted in *Early Writings of Marx*, *ibid.*, p. 209
- In this context it will be interesting to compare Marx's view of the role of illusion and the role of the 'veil of ignorance' as propounded by Rawls. Rawls of course uses the concept of the 'veil of ignorance' as a redeeming feature which helps man to accept procedural justice.
- 25 Vide, K. Marx and F. engels, *The German Ideology*, Progress Publishers, Moscow, 1968, p. 86.
  - 26 E. P. Thomson : *The Poverly of Theory & Other Essays*, The Merlin Press Ltd., 1979, 2nd impression, p. 278.
  - 27 K. Marx : "Excerpts from James Mill's Political Economy" in *Karl Marx Early Writings*, *ibid.*, pp. 277-78.

# Marxism And Philosophy

Satinath Chakraborty\*

Philosophy, someone said, can neither bake a cake nor cure a toothache. It is, indeed, no business of philosophy to do so. Viewed historically, philosophy, man's highest intellectual activity, arose as a theoretical endeavour at understanding the nature of the universe and man's place in it. True, one cannot get this theme of philosophy readily articulated and hope to find it settled by philosophers all at once. Yet philosophers, throughout the ages, in some way or other, have kept coming back to it. At times, when society had maintained its relative stability and its politics were free from turmoil, they dealt with the problem with an air of finality and absolute certainty. It is scarcely surprising, therefore, that their theoretical engagement with problems, either cosmocentric or anthropocentric or both, would assume a naive speculative character in the absence of adequate scientific data, information or experience. Yet this speculation need not necessarily be interpreted idealistically. The speculative mode of thinking of the ancient thinkers assumed both idealist and materialist forms. From Thales to Anaxagoras, the pre-Socratic philosophers, dealt with the physical world materialistically. Afterwards, Protagoras came and proclaimed a central place for man in the universe and Socrates was condemned to death for the charge of corrupting the Athenian youth. But Plato escaped censorship and flourished with his Utopia together with his objective idealist supernatural metaphysics. The impact of society on philosophising became all the more evident when the division of labour in the society brought about a separation between mental and manual labour. It is hardly surprising therefore that idealist-speculative thinkers would counterpose philosophy to practical activity and experience, or even denounce them as the source of ignorance and error. Truth and knowledge were then regarded as the exclusive possession of the leisured few philosophers, the aristocratic elites of the society. We still hear the echoes of the voices of Plato who condemned the vulgar multitude as incapable of acquiring knowledge of reality—the pure forms—the eternally fixed, static and immutable beings towering above life and the world of space-time. Such a world of "pure ideas" representing as it were the supernatural

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essence of things and phenomena of the real world, however, could only be grasped by the "pure forces" of reason of the philosophers. Significantly, therefore, Plato desired his ideal state to be ruled by philosopher-kings aided by lesser intellectuals of the leisured classes.

Such an aristocratic view of knowledge and society was condemned in the new age of science and surging democratic spirit which declared knowledge open for all, provided one's mind is freed from all "innate ideas", subjective predilections and prejudices generated by society and tradition. Yet we hear some philosophers repeatedly telling us even to this day what we cannot know. Locke and Hume, Kant and Russell and the neo-positivists in modern times seem to defend a theoretical conception of knowledge which, in some way or other, denies man's ability to know the world, to know its essence truly, and to transform it surely on the basis of such knowledge. True, for a long time faith blinded reason, and arrested experiment and industry. Knowledge was regarded as a jealously guarded private treasure of the church which sought to justify theory by faith. Theological superstitions and illusions coupled with false idealist myth-making, a legacy so typical of the 'dark age' and feudal exploitative society reduced philosophy merely to a system of barren statement of principles in the light of which no scientifically testable theory about any concrete phenomena of nature and society could be formulated. But this stagnant intellectual climate did not last long. New social aspirations and movements generated conflicts, which in their turn sharpened ideas. Descartes, Spinoza and Leibnitz, Hobbes, Locke, Newton and others heralded a new epoch for the rising bourgeoisie who needed a new rationalism and natural science to develop the capitalist mode of production. Ever since Bacon gave a clarion call to the European scholars to unravel the mysteries of nature, the subsequent scholars following him had brilliantly responded to his call.

In course of time capitalism had gradually established itself in its own home and held its sway in other parts of the world. But pressed by the constraints of historical circumstances and the inner contradictions of capitalist relation of production, the much adored bourgeois rationalism began to show its inbuilt class limitations and discrepancies. Even the very concept of 'rationalism' assumed different conceptual meanings conditioned by the very process of the historical development of capitalism in the 19th century which brought to the fore the disparity and unevenness in its internal structure.

The shallow empiricist theory of knowledge with its preoccupation with the parts at the expense of the whole could not get beyond the

limits of individual atoms that English utilitarianism imposed on it. But German idealism, on the contrary, while ignoring the utilitarian 'consumer's ethics' and 'Brick and Mortar' psychology, developed a 'producer's ethics' of 'duty for duty's sake', befitting to the aspiration of the German bourgeoisie and their abstract rationalism. Yet Kant at least claimed that man should not be used as a means to an end external to him. Such a proclamation, of course, had its logical charms but left very little scope for its practical realisation in real life and concrete society. Kant, indeed, professed much goodwill. But he was "satisfied", as Marx and Engels remarked in *German ideology*, "with goodwill alone, even if it remained entirely without result, and he transferred the realisation of this goodwill, the harmony between it and the needs and impulses of all individuals, to the world beyond." (Marx and Engels—*German Ideology*, Progress Publishers, Moscow, 1964 p. 207).

After Kant, German idealism, in opposition to English empiricism and utilitarianism, moved towards developing a new logic, epistemology, methodology, ontology and a view of man and his relation to society in its own way which found its highest culmination in the Hegelian system. While exposing the dialectical character of all previous philosophy, Hegel, however, mistakenly regarded his own philosophy as the ultimate and final realisation of absolute reason. No wonder that its conclusion would be used to justify "gratuitous conservatism" or "authoritarianism of Prussia" against which the young Hegelians, the radical inheritors of Hegel's outlook, revolted. But it was left only to Marx to demolish the very foundation on which Hegel had built its idealist dialectics. Subsequently Marx arrived at a new way of looking at things and a new materialist world outlook, one that has shaken the world ever since its very inception. This indicated a new stage in the development of philosophy which achieved a new self-consciousness in the unity of theory and practice of the working class. Neither abstract idealism nor pre-Marxist materialism could cope with the problem of real change and development in real life and society for they approached the problem in the most abstract possible way, and failed to identify the real historical forces who are to transform their ideas into reality in conformity with the objective necessity and the laws of social development. Pre-Marxist materialism was idealism primarily because it could not explain man and the dialectics of society and history materialistically. To be sure, Marx developed scientifically a new image of man in the natural and social scheme of things—one that has replaced Hegel's concept of "Universal man" and Feurbach's view of 'Abstract man' as a biological being. For Marx,

man—the highest product of material evolution on this planet, is an “ensemble of social relations”, a bearer of class essence in class society. Marx and Engels and after them Lenin, the champions of class struggle and revolutionary philosophy, in arming the working class with a scientifico-philosophical world outlook not only critically considered the experience of previous philosophical and social thought but also took keen interest in the scientific and technological experience of their time. Unlike contemplative philosophers and ‘the professors of magic’ and abstract thinking Marxism actually developed a non-contemplative viewpoint of the world from the materialist standpoint of life and practices. This non-contemplative attitude is clearly expressed in Marx’s famous theses on Feurbach, particularly in the 11th thesis. “Philosophers,” Marx said, “have only interpreted the world in different ways. The task, however, is to change it”. This thesis is often interpreted in a shallow pragmatic fashion by some thinkers who mistakenly believe that practice is everything in Marxism and theory is nothing. True, Marx was opposed to “Pure theory” or “Pure understanding” for the sake of understanding only. In his critique of the Hegelian philosophy of law he indeed demanded a negation of philosophy in its traditional idealist form, but not of philosophy in general. This point is seldom understood clearly even by many contemporary interpreters of Marx, notably by some Western Marxologists who, despite their aversion to contemplative positivism and commitment to action and social change, tend to undermine the cognitive significance and the philosophical—theoretical implications of the logic of Marxism and the Marxist world outlook. Condemning Engels and Lenin for ‘debasing’ and ‘vulgarising’ Marxism, they purport to suggest the idea that the dialectical materialist viewpoint of the world is in essence incompatible with or even contradictory to the true spirit of Marxism. In the name of undertaking an analytical study of ‘praxis’, they tend to reduce the whole content of Marxist philosophy to the ‘philosophy of praxis’ only. Within the limited span of this paper it is not possible to offer a detailed critique of their views but suffice it to state that analyses must have their bases. A subjective-idealist-relativist-agnostic interpretations of practice can hardly be compatible with Marxism. Yet one may wonder what theoretical bases are actually defended by “praxis theorists” like Karl Korsch (*Marxism and Philosophy*), Georg Lukacs (*History and Class Consciousness*), Jean Paul Satre (*The Problem of Method*), Alfred Schmidt (*The Concept of Nature in Marx*), Jurgen Habermas (*Theory and Practice*) and so on. There are also others who seem not to understand the fact that the concept of philosophy as a scientifico-philosophical world outlook arose and took shape in the course of the

formation and the development of the theory of Marxism. For these thinkers "scientificity" and "world outlook" are mutually exclusive concepts. For narrow 'scientism' they counterpose philosophy to science and social practice. They express their allegiance to science and scientific research, but are unable to grasp the point that scientific enquiry down the centuries has been chiefly concerned with the removal of mysteries in nature and society and with the attainment of objective truth.

At the initial stages of the development of natural and social sciences only fragmentary knowledge of some aspects of the world could be comprehended in an isolated manner. At this point, philosophy (or natural philosophy) while started exploding the myth of the theological cosmos sanctified by religion and justified by faith acted as a speculative unifying force which represented a level of man's theoretical and practical activity. It then provided a comprehension of the universe merely as the "Complex of things" and man's place in it. The impact of science on philosophy was then not very kindly taken and cordially accepted. But from the time of Newton the impact of science on philosophy became all the more evident. Both Locke and Kant, for example, were alive to the impact of Newtonian physics. But what general direction and theoretical conclusions can be derived from their interpretation of scientific knowledge? Ever since the development of Kantianism it has been fashionable with certain philosophers to insist on our reducing the entire philosophical problem of knowledge to a narrow field of investigation — 'epistemology' — with the exclusive task of determining the limits of knowledge. It is indeed, important to ascertain in science the limits of the applicability of a theory in a specific sphere of objective reality — nature and society. But from this it does not necessarily follow that epistemology in no way be concerned with obtaining a more or less true picture of the world, and that knowledge has only to be considered as a 'specific scheme of the organisation of the subject of knowledge'. One's adherence to this position would culminate finally in the reduction of philosophy to logic and thereby a negation of the problem of world view outside the scope of scientific knowledge would be justified only to make room for faith. Actually it so happened with Kant because science, for Kant, is incapable of grasping "things in themselves." The range and validity of science, he believed, 'consists of things as selected and ordered by the rational forms of scientific thinking'. Presumably, Kant could not solve the problem of the attainability of objective truth firstly because, he failed to comprehend the influence of human practice on human thought, logic and scientific method, and also because, the sources of the attributes of true know-

ledge-i.e., universality and necessity,-for him, did not rest in the objective world but in the nature of sensuousness and intellect. No wonder that man's ability to acquire truly objective knowledge would be denied by him and an agnostic implication of science would appear final and absolute. Yet philosophy did not become stagnant with Kantianism. Hegel, for example, fought against agnosticism so far as it was possible, as Engels very correctly maintained, from the position of idealism (F. Engels—*Ludwig Feuerbach and the end of German Classical Philosophy*, Foreign Language Publishing House, Moscow, 1949, p. 152). Marx and Engels refuted Hegel's abstract idealist approach to dialectics, science and history from dialectico-materialist position. "Hegel", Lenin maintained. "actually proved that logical forms and laws are not empty shell but the reflections of the objective world. More correctly, he did not prove but made a brilliant guess" (V.I. Lenin—*Philosophical Note Books*, Moscow, 1963, p. 180). Hegel could only guess it for he could not arrive at the real basis on which "the logic of ideas" and "the logic of things" are to coincide. Hegel indeed, realised the importance of practice but only practice *in abstracto* posited as the source of all being: Marx who took a materialist position criticised Hegel's notion of practice as "abstractly mental labour" (Karl Marx—*Economic and Philosophic Manuscripts, 1844*, Foreign Language Publishing House, Moscow, 1961, p. 152) though he accorded primary importance to practice to explain the socio-historical character of human knowledge and ideas. Yet Marx nowhere implied the point that man himself had created matter itself and that the independent existence of objective reality did not provide the pre-condition of all human activity. True, one can cite examples from Marx's writings, (particularly early writings prior to 1845 when Marx was still influenced by idealism) to prove the fact that Marx was not concerned with the epistemological question whether being reflects consciousness or consciousness reflects being. The question, at any rate, was still left to be articulated clearly: yet Marx and Engels 'never rejected' the materialism of the enlightenment, even when they criticised it, they built nevertheless upon its foundations and at no time did they ever have occasion to revise the judgment of 1845 that materialism is necessarily "connected with socialism and communism" that in fact provides its *logical basis*' (John Hoffman—*Marxism and theorists of praxis*, International Publishers, New York, 1975, p. 83). A mere collection of a heap of quotations from the early writings of Marx cannot, however, disprove the absolute priority of nature to man by emphasising their dialectical reciprocal relation because the question will still remain—'what precisely is this relationship?' Without a dialectical materialist interpretation

of the concept reflection in conformity with the ideas of Marx and Lenin one can hardly hope to get over the idealist hangover in understanding history, science and human practice transforming nature and society. The present stage of the development of scientific knowledge and new forms of social living and thinking a concrete basis has been provided for the comprehensive unified view of the universe and man's place in it when philosophy itself has assumed the status of a science. But how can it be understood? When we speak of the speculative nature of a scientific theory, we realise that the theory will sooner or later be confirmed or discredited by experience, by experiment. "Philosophy is far more speculative" as Theodor Oizerman observes, "than theoretical natural science, but it cannot appeal to future experiments and observations. What is it then that sets a limit upon the philosopher's speculative licence, if it is not to be intimidated by mere isolated facts, since they can neither confirm nor deny his conception? Logic? Yes, of course philosopher respects logic; it is his own chief weapon. But logical inference is possible only from logical premises, which are not contained in logic itself. Logic provides no criteria of the truth sought by the philosopher or any theoretical scientist. We assume that the significance (and to a certain extent the truth) of philosophical proposition is to be inferred from their being applicable in various sciences and practical activity. And further, philosophical propositions may be regarded as a kind of theoretical recommendations. If these recommendations arm science in its pursuit of truth, arm man in his practical transforming activity, then they acquire, thanks to this, the possibility of real verification: So the point is not that philosophical propositions are true because they work; this approach to the question is alien to Marxism, and, as we know, is propagated by pragmatism". (Theodor Oizerman - *Problems of the History of Philosophy*, Progress Publishers, Moscow, 1973, pp. 134-35). Thus rejecting in principle the idea of a final and complete philosophical system (an "absolute science" as Marx called it), Marxist philosophy, without abandoning the Materialist approach to the relationship of thought to being, critically sums up and synthesises the most general laws of development of nature, society and thought and represents a world outlook (truth) as well as a way to truth (method). It is inseparably linked with social practice whose development laws it reveals and expresses the interest of the working class. To say this is not, however, to ignore its close link with sciences, natural and social, which supply it with materials for generalisation and the real possibility of its constant development and enrichment of categories which, in turn, provides with a scientific methodology for cognising the objective reality with all its inter-relations

and developing inner contradictions. Assuredly, the development of scientific knowledge instead of diminishing the role of philosophy as a scientific world outlook has heightened the need and the relevance of scientific philosophy to an extent unthought of before.

In the current epoch, the challenge of such a scientific philosophy is posed by Marxism. No wonder that the scientific philosophy of Marxism or materialist dialectics would receive ever increased attention and recognition of people even in some scientific and academic circles all over the world. Neither positivistic scientism with its anti-historism and philosophical nihilism, nor pragmatism with its profit oriented opportunism and experimentalism or existentialist anthropocentrism or 'methodological falsificationism' has been able to contain the logic of Marxism by subtle methodological and 'philosophical attacks'. And philosophy of Marxism continues to develop creatively.

Of course, creative development of Marxist philosophy in close alliance with science and the developing practice of man as a social being at the present stage of the development of human culture, material and spiritual, must include, among other important aspects, a critique of the emerging trends of thinking of western philosophers and their intellectual sympathisers in other parts of world who may not subscribe to the Marxist world outlook. But for the limited space available here this short article only seeks to achieve, at least in rough outlines, some critical insights into the broad theoretical and socio-political background of the emergence and development of Marxist philosophy which represents a case for the revolutionary interpretation and transformation of the world in favour of the exploited masses of people who continue to suffer in ignorance and bondage even to this day despite the existence of our best theories of knowledge and of morality at ideal levels *in abstracto*.

# Logical Atomism

Baijayanti Bhattacharya\*

The term "Logical Atomism" seems quite in keeping with the current fashions of philosophical terminology. It has hints of having affinities with science as also with logic,—which has kept pace with the age so well that if Aristotle happened to come across any of its modern classics he would very probably have taken it to be some obscure Chinese manuscript. Russell, who fathered most of the brood of modern philosophical theories, had conveyed the good tidings of the birth of a new type of philosophy in his *Knowledge of the External World*. That philosophy—for want of a better name (as he confessed in his usual candid manner)—he christened *Logical Atomism*. In this sense, Logical Atomism is nothing in particular but just "Russellianism", and what he himself might have condemned as a peculiarly "woolly" notion. But the term has a more specific sense, in which case it is as precise as any term could be. In this sense, Logical Atomism is the theory that the whole structure of logic is constituted of atomic propositions and their combinations, and that the world is constituted *at least* of atomic facts.

Logical Atomism is a transitional stage in Russell's philosophical development. It is an elaboration of the ideas which he discussed with his pupil and friend Wittgenstein in the years 1912-1914. Since the latter disowned the views Russell put forward, we can know the ideas of the young Wittgenstein only in the attire Russell has tailored for it, even if it is a misfit. The view, Russell asserts, "is one which has forced itself upon me in the course of thinking about the philosophy of mathematics", and is its consequent, even if not a strictly logical corollary.

I shall mention in passing a certain explanation regarding Logical Atomism offered by Passmore, which I find not quite apt. He says (in *A Hundred Years of Philosophy*, p. 234) that Logical Atomism is "an attempt to describe the kind of facts there *are*", and leaves it at that, perhaps thinking of propositions 1.1 and 2 in Wittgenstein's *Tractatus*. This account, it seems to me, turns an unnecessary somersault in order to look at Russell's theory. Russell perhaps searched for the ultimate

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elements of logic and his realistic temperament led him to the existence of atomic facts. In short, his Logical Atomism is what he claims it to be, and is not (primarily at least) Physical or Factual Atomism. As he himself urges, "Logical Atomism is a certain kind of *logical* doctrine, and *on the basis of this* a certain kind of metaphysic." The logic is *atomistic*, and the swing of the pendulum from the monistic logic of Idealists has thus reached the opposite extreme. The *atomism* is *logical*, the atoms which are the last residues of analysis are logical atoms, not physical atoms.

Meinong's shadow-world of being, in which tables, Homeric gods, relations and chimeras all peacefully cohabited, was a world in which Russell with his realistic tendencies had found himself in his youth. But his robust common sense demanded a flight from this world, and analysis—with which Logical Atomism came around—helped fight back all confusions, obscurities and hobgoblins of philosophic fancy. Analysis was nothing but the *twin tools* of the theory of descriptions and the method of logical constructions. All this, however, might suggest that Logical Atomism was anti-metaphysical, which it was not, at least in the form in which Russell embraced it. It is a great metaphysical system, in spite of Russell's frequent chastisements of the system-builders in philosophy. It rivals the great systems of Spinoza and Leibniz, and its breadth of sweep, clarity of concepts and detailed working out often pale them into insignificance.

Exhilarated by the success of *mathematical* logic, Russell thought that *Principia Mathematica* is an adequate skeleton of a language capable of expressing all that can be said at all, given the flesh and blood of extra-logical vocabulary. Corresponding to the propositions containing variables and joined by truth-functional connectives the world would consist of particulars which are independent and extensionally connected. As the techniques of mathematical logic had defined and made theoretically superfluous the complex and abstruse concepts of mathematics, by the method of rigorous analysis the less concrete items of the furniture of heaven and earth could be defined and theoretically eliminated.

Wittgenstein held that the artificial language of truth-functions was the sketchy outline of the language of ordinary discourse, though the true logical structures of language is usually concealed by our habitual linguistic conventions. The thesis that language is *throughout truth-functional*—known as the thesis of extensionality—coupled with the thesis of atomicity, provided the twofold prop laid by Wittgenstein on which Russell's Logical Atomism could be constructed. He substitutes for the principle of atomicity formulated by Wittgenstein a more plau-

sible version in *An Inquiry into Meaning and Truth* (p. 266). The technical form of the principle, he says, "asserts that all propositions are either atomic, or molecular, or generalisations of molecular propositions; or at least, that a language of which this is true, and into which any statement is translatable, can be constructed." This principle is 'true' in the sense that it is possible to construct a language such that (a) every sentence *in the language* is constructed in accordance with the principle, and (b) every significant sentence in *any* language can be translated into this constructed language.

The object-language contains a certain store of proper names, predicates, dyadic relations, triadic relations, etc., and Russell symbolises these by inventing a whole class of symbolic devices. Any  $n$ -adic relation can be combined with any  $n$  proper names (which need not all be different) to make a proposition (cf. *Inquiry*, p. 263).

Suppose  $n_1, n_2, n_3, \dots$  are proper names,  $P_1, P_2, P_3, \dots$  are predicates,  $R_1, R_2, R_3, \dots$  are dyadic relations,  $S_1, S_2, S_3, \dots$  are triadic relations and so on. Then  $P_1(n_1)$  stands for " $n_1$  has the predicate  $P_1$ ";  $R_1(n_1, n_2)$  stands for " $n_1$  has the relation  $R_1$  to  $n_2$ ";  $S_1(n_1, n_2, n_3)$  stands for " $n_1, n_2, n_3$  (in that order) stand in the relations  $S_1$ ", and so on.

Note that relations cannot hold for a single proper name. Also the symbolic representation for expressing the fact that a proper name has a predicate and that for indicating that a certain 'P' is an attribute are quite distinct. The symbol for the latter (as we find in the essay *Logical Atomism*) is of the form—"x is P". However that may be; the term 'proper name' perhaps needs some clarification. Russell, in order to escape from the clutches of the Aristotelian subject-predicate logic explains propositions like "This is red" as equivalent to "Redness is here", and says that this "red" is a name, not a predicate. He also has the intention of doing away with the residual "somewhat", the slippery core of reality of traditional thought. He wants to maintain that qualities of things are themselves particular, unique occurrences in specific sets of spatio-temporal co-ordinates. As such, these *ought to have* proper names, though for the pragmatic purposes of "minimum vocabulary" (see *Human Knowledge*) we have to rest content with inaccuracy. Since attributes, logically, have proper names, things of the world, being mere patchwork quilts of such attributes, also have proper names. In his theory of proposition, therefore, Russell calls the old-fashioned grammatical subject a 'proper name'.

Now, molecular propositions are atomic propositions in combination. All the rest of our propositions are generalisations of molecular

propositions, all of whose products are not logical consequences of their raw materials.

This is the bare sketch of the internal structure of the internal structure of logical language. But such structures might be *sheer fictions* if facts are not taken account of. And the belt boy god of Leibniz was not in the service of Russell to secure pre-established harmonies. So he seeks a one-one correspondence between propositions and facts: atomic and molecular propositions have corresponding atomic and molecular facts. And whole bands of facts quietly march into the arena of his philosophy—particular and general facts, positive and negative facts—all striking poses of being ultimate reals.

Two key-conceptions of Logical Atomism, as Urmson points out, are *atomic facts* and *their pictures*. Examples of atomic facts or propositions were not cited by Wittgenstein, who perhaps thought such tasks to be below the prestige of a logician. But favourite examples of Russell's (like "This red") suggest the alliance of Logical Atomism with the *theory of sense data* and this made the former more popular with the philosophers of that time. Now, according to Russell, "In a logically perfect language, the words in a proposition would correspond one by one with the components of the corresponding fact." It was doubted by many if the language of every-day discourse could ever be made perfect, by such simple devices as the elimination of the verb "to be", as e.g. in the proposition "This red". Certain difficulties inevitably arise. (1) The word "This" in the sentence "This red" may not be a logically proper name, but the abbreviation of some such description, as 'The thing present here and now, in which case we shall commit the double mistake of passing off a complex description as a name (a logical howler), and that of representing a complex description by a single word (a grammatical blunder). (2) It is not certain that "red" names a completely determinate shade of colour, and so to perfect our language we might need *innumerable symbols* for all the possible shades of red. (3) Russell seeks to symbolise the world in terms of small type letters, Greek letters and the capital R. Facts, however, might resist such crass simplification. Anyway, ideally, the relation between statement and fact stated was one of formal or structural identity and this is what was depicted by "picturing", though Russell would not go the whole way with Wittgenstein to its precise implications. The perfect language has a structure more appropriate to facts than our humdrum languages, which are obscure, imprecise, and as such, misleading and imperfect. Thus, 'This red' seems to depict the fact

more accurately than 'This is red', for 'is' is a linguistic device without any correlate in the world of facts. Atomism was the rationale of the practice of analysis; it explained and partially justified the analysts' labours to give precision to words and sentences. To look at it from another angle - if Logical Atomism is *right*, then logical analysis is a *necessity*. In other words, if logical language *does* faithfully represent facts, we must - with the help of analysis - make our language more accurate in order to comprehend the nature of reality. Of course, analysis of the kind found in the theory of descriptions does not require a fullfledged theory of atomism, which as a metaphysical theory demands that the reals we arrive at by an analysis are in some sense *ultimate*. But some types of analysis do seem to be harnessed to Logical Atomism. Therefore, it will be worthwhile to take a fleeting view of the types of analysis Logical Atomism operates with.

Russell introduced the expression 'Incomplete symbol' in Chapter III of *Principia Mathematica*. "By an incomplete symbol" he says, "we mean a symbol which is not supposed to have any meaning in isolation, but is only defined in certain contexts." The non-mathematical examples were 'definite descriptions' (phrases like 'the so and so'), the mathematical examples being - symbols for differentiation and integration. Such symbols have only a definition in use and this distinguishes such symbols from 'proper names'. By such analysis he reduces a sentence like "Scott is the author of Waverly" into "There is one and only one author of Waverly and that author is Scott." Thus, whenever by logical analysis we can eliminate an expression without changing the import, it is to be called an incomplete symbol. In a similar manner Russell eliminates symbols for classes, which makes all his critics raise quite a hullabaloo. In this connection, to the expression "logical construction", introduced rather casually by Russell, was attached a technical meaning. If 'X' is an incomplete symbol, then 'X's are logical constructions. Since 'class' is an incomplete symbol, 'classes' are logical constructions.

Certain points of importance in this connection are as follows. (1) To say that 'X's are logical constructions is to utter a proposition about words. It is part of what Carnap in his *Logical Syntax of Language* calls the material mode of speech. (2) It is considered wholly improper to say such things as "I am writing on a *logical construction*", even if, one holds that 'physical objects' like tables are logical constructions and not what we are directly acquainted with as sense data. (3) To say something is a logical construction is not to say that it is fictitious, (4) nor to suggest that it is a mental construct like Locke's complex ideas. A logical construction may be psycholo-

gically basic. Russell rephrased Occam's razor ( — "Entities are not to be multiplied unnecessarily" ) to read "Wherever possible, *replace inferred entities by logical constructions*", thus avoiding the risky step of inference, as Russell explains in his essay "Logical Atomism". Hence, if we are to follow Russell's advice, we should not infer that there are such entities as physical objects, persons and classes, but recognise that these are logical constructions out of sense data, fleeting experiences, and individual members.

The elimination of such logical constructions by replacing in propositions all incomplete symbols by names of possible objects of acquaintance is another type of analysis. Various known as new-level (as opposed to same-level like the theory of descriptions) or philosophical (as contrasted with logical) or directional or reductive analysis. An example of such analysis is the reduction of a proposition like "The modern age is materialistic" into elements out of which such abstract terms as "the modern age" and "materialistic" are constructed. The same level analysis involves only logical, not metaphysical, progress, but in new-level analysis we get down, to quote Russell - "to the *ultimate simples*, out of which the world is built. simples having a kind of reality not belonging to anything else" "In this way", says an interpreter (Urmson) "we satisfy the metaphysician's desire that everything should be sounded in *the given* and at the same time avoid the scandal of inferred entities by showing that, in a way, we *never, except in appearance*, go beyond the given."

The metaphysic of Logical Atomism is *conservative* in the sense that the task it assigns to itself is one which Kant, in fact, and Bradley, in intention, undertook to fulfil. This is the duty of critical philosophy, which is an effort to think clearly and consistently about the nature of ultimate reality. In this sense, metaphysics, as Wisdom - a logical atomist - declares, is "a *new knowledge* of facts, *not* a knowledge of *new facts*." There is, however, a *forward-looking element* in the theory. It traced the source of a philosophical quiz *not* to the elusive, evanescent nature of reality, *nor* to the failings of us finite mortals, *but* to the misleading nature of conventional language. As Wisdom said, "The distinction between translation and analysis is not a distinction between *what* is said, but between *why* it is said." Thus the only non-linguistic thing about philosophy is its aim of revealing the structure of facts.

In Russell's philosophy we come across an *omnium gatherum* of facts of every description. Russell recognised an overwhelming variety of facts, though the most consistent of his followers would have nothing to do with anything but atomic facts. Russell refused to

[REDACTED]

believe that we have to shelve our common sense claims when we go philosophising. And so, he admitted *general facts* as well as *negative facts*. Lively controversies arose among his followers like Wittgenstein, Ramsey and Wisdom into the details of which we cannot enter in our present discussion. His argument in favour of this admission is that when a proposition cannot be analysed into a truth-functional complex of atomic propositions, it must be recognised as stating a special kind of fact of its own. Wittgenstein and Ramsey took exception to Russell's contention and identified universal and existential propositions respectively with truth-functional conjunction and disjunction. Wisdom also argued that the only difference between general and particular propositions is that of defect of explicitness on the part of the former. Thus when we assert "All men are mortal" or "Some men are honest", we fail to make quite clear what we are asserting ; whereas when we assert "Tom, Dick and Harry are honest" we are stating explicitly what we want to assert. Russell had said that since general propositions cannot be treated as simple truth-functions, general facts are therefore to be admitted. Ramsey replied that since the only facts are atomic facts and all propositions are reducible to atomic propositions, the propositions which cannot thus be reduced are not genuine propositions at all ! Such propositions express rules which we habitually follow, and this view was later found acceptable by the Logical Positivists. But Russell was not one to forget facts for the sake of an argument, and he gallantly maintained his position.

This, however, was not the only heterodoxy of Russell's. He also accepted *negative facts*, though this was not a separate class of facts. The particular-general and positive-negative classes overlapped, and Russell recognised four sorts of fact—particular positive, particular negative, general positive and general negative. He never asserts dogmatically that there *are* negative facts, but simply suggests that there *may be*, admitting that the issue is a difficult one and no ready-made solution is available. Russell did consider an alternative view, that "not-p" means the same as "*there is some proposition which is true and incompatible with p.*" But he rejects this for three reasons : (i) incompatibility is no less metaphysically disturbing than the simple negation as a basic element in facts, (ii) because this makes a complex fact basic - "p being incompatible with q", (iii) because elements in the alleged fact are propositions. and Russell did not consider propositions to be capable of being basic elements—they are logical constructions. Wisdom in answer to the question

whether "not" names an element in the world, answered rather light-heartedly—"I dodge the difficulty by saying that it negatively sketches a fact. This just means that its positive does sketch a fact." Ramsey tried to solve the problem by suggesting that it is only an accident of our symbolism that we have the word "not" at all, we might as well write what we negate upside down. He said that to assert "not-p" is to assert a disbelief in p, trying to avoid the difficulty by replacing affirmation and negation by belief and disbelief. We may conclude the discussion by asserting that the analysts had found no satisfactory alternative to Russell's view.

Another kind of fact, which Russell himself calls a new inmate of the zoo, is the fact corresponding to an intensional function. (See *Principia Mathematica*). "A believes that 'p'" ('p' standing for any proposition) is clearly not a truth-function of 'p', since its truth-value in no way depends on the truth-value of 'p'. In the *Analysis of Mind* Russell had a temporary flirtation with the behaviouristic theory, and said that as one sentence is to be analysed by saying that 'A behaves in such and such a way' and this could be found in the realm of facts. But he later rejected this easy solution and his followers also differed among themselves on this point.

Wisdom, by some kind of verbal hocus-pocus, tried to make his atomic facts contain other facts, but this, some say, takes away from the consistency of the position. This is a problem which the upholders of the view that language has the logical skeleton of a truth-functional logic must face, as Urmson asserts.

Thus we find that Russell was not only the highpriest of Logical Atomism, but also its arch heretic. He was notoriously not a reliable party man. Urmson eulogises Russell in the following words. "It is a wonderful and admirable thing about Russell how candidly and exhaustively he would raise difficulties about the views he had fathered. His distaste for infanticide could never prevail against this hatred of error."

The metaphysic of Logical Atomism sometimes appears as the justification of empiricist practice throughout the ages, the view of the world which justifies reductive analysis on empirical lines pursued with complete rigour. Another way of getting to Logical Atomism is *via* the route of mathematical logic. Empiricism now only provides the principle of selection of constants. In following this road, Russell joined the troupe of philosophers who lick the world into the shape of their novel theories; this explains some of his heretic inclinations. Thus in mathematical logic, the quantifier is a primitive idea and

quantified functional logic is not reducible to the calculus of propositions—hence he does not mind admitting general facts. But those who traverse the road of empiricism, like Wittgenstein, assert that in theory generality is eliminable.

This was not the first time in history that philosophical hopes were built on mathematical foundations, and in this sense Russell, as a partisan of Logical Atomism, joins the group of philosophers of the tradition of Descartes and Spinoza.

A brief survey has been made of Logical Atomism as a logico-metaphysical doctrine, and it is time we dealt with certain errors of exegesis that, to the best of our knowledge, some interpreters have committed. Urmson's account of Logical Atomism in his book *Philosophical Analysis* is admirable, and conducive to a clear understanding of the main issues of the theory. But he somewhere makes the statement that a nut-shell account of Logical Atomism would be "the structure of Russell's mathematical logic." Taken at its face-value, this is a somewhat misleading statement, for nowhere did Russell suggest that his *Principia Mathematica* by itself is a clue to the cosmos. A perfect language, which is the ideal of logic, has such a structure, and Urmson's attitude of poking fun at this serious and plausible enough thesis can hardly be dismissed lightly.

Now Russell called the universal elements components, and the particular elements constituents of the facts, and he used small-type letters for constituents, and the capital R and Greek letters for components. In this connexion Urmson mentions an objection—that in the case of ordinary language at least we use words of the same type to represent both. Russell, of course, would be quite ready to admit this, and in fact, this is a reason why ordinary language cannot be a suitable instrument for logic. Another objection is that the mere use of different types cannot express the "immense gulf of difference" that separates components and constituents. In answer to this we might urge that facts contain no chasms within them. If there were gulfs between relations and relata, relating would at best be a flimsy attempt at spanning them,—in effect, making confusion worse confounded. And in any case, if we are to express *in language* what difference there is, the use of different types will serve our purpose well enough. When discussing Russell's conception of incomplete symbol, Urmson charges Russell, of all people, with a confusion. According to him, Russell sometimes seems to imply that showing X to be an incomplete symbol is the same as showing that there are no X's; thus he does not claim to have proved that classes



are incomplete symbols because he cannot prove that classes "do not exist." Here, unfortunately enough, Urmson has failed to appreciate the very spirit of *Principia Mathematica*. In fact, in a treatise on mathematical logic, Russell does not *need* to prove such metaphysical theories regarding the ontological status of classes; his only concern should be to see whether the concept of classes is amongst the minimum requisites for logic or not. Urmson's charge is like accusing a writer in Botany to justify a principle of Thermodynamics. If you have no *need* whatsoever to distinguish Tweedledum from Tweedledee, do you bother your head if you *can* really do it or not? And as to Urmson's charge that Russell confuses classes with symbols of classes, it is sufficient to observe that he does nothing of the kind: there is a world of difference between slips and confusions. Not did Russell mean to say in his theory of descriptions that descriptions "stand for no genuine objects." His intention was to show that definite descriptive phrases do not refer to singular facts, as they appear to do, and are misleading modes of language which we can do without. Any question regarding the genuineness of objects brings in the vexed problem of appearance and reality, which science dare not grapple with.

When giving an example of same-level analysis as contrasted with new-level analysis Urmson transforms (a) "My present visual sense-datum is red" into (b) "There is one and only one thing which is a visual sense-datum for me now and it is red." He does not mention that the proposition (a) already contains a new-level analysis, for our actual original proposition must have been "This *thing* is red". This is an error of omission. But in the proposition (b) he uses the word "thing" which suggests a throw-back to our original conception of a physical object and this is an error of commission. In connexion with the discussion of facts corresponding to intensional functions, Urmson says that this problem is "a running sore for the upholders of the view that language has the logical skeleton of a truth-functional logic." But this need not be the case if a proposition like "John believes 'p'" is considered a unit (somewhat in the manner hinted at by Wisdom), not *functionally* analysable any further, but capable of being made explicit by mentioning all that 'p' signifies or implies. In this way we might elaborate the proposition 'John believes that there are mock turtles', by saying "John believes that there are creatures who are half cows and half turtles", and so on. Of course, a behaviouristic analysis would give rise to numerous difficulties, but that would really be inventing troubles, for a logical atomist has no logical compulsion to become an advocate of the "thinking-twittering" theory.

Let us pass on to several other misinterpretations of Russell that we have come across. Pears in his essay in *The Revolution in Philosophy* displays a grievous lack of clear thinking and makes rather hasty general remarks in the big bow-wow style of a profound metaphysician. He opines that Russell has absorbed a part of the idealist tradition just because he takes propositions as units of his logic. So had Mill and Moore. The idea is in no sense essential to Idealistic logic alone. Somewhere else Pears asserts that in the construction of the ideal language, aesthetic considerations also played a part, for the atomists were seeking clarity and order. I for my part think that such general statement is neither happily worded nor correct. Colourful confusions sometimes stir our aesthetic imagination, which neatly arranged blobs of colour may fail to do. Moreover, the Logical Atomists were in spirit scientists, not artists, and science has no need to borrow the concept of clarity and order from the domain of aesthetics. He also urges that Logical Atomism is the result of a certain kind of philosophical vision. Now, it is a little difficult to picture as visionaries these rigorous rationalists (like Wittgenstein) who follow logic even if it lead them to the devil, or just cold-blooded realists (like Russell), who never part company with common sense. In the essay Pears also exhibits certain wrong conceptions of his regarding Bradley's logic and a glib carelessness regarding the use of words such as general "objects"; Russell would have abhorred such a metaphysically tinted word like "object". These, however, are minor errors compared to the statement in which he declares Logical Atomism and Bradley's monism to be of "the same general type". It is a fully muddle-headed notion to depict this opposite and warring views to be of "the same general type", whatever meaning he might attach to such a description. His sole argument seems to be that they "operate with the same set of philosophic concepts. — object, particle, division and synthesis!" Following this course of reasoning, it would be possible to reach the *reductio ad absurdum* that all philosophies are of the same general type! It would do well to remind Mr. Pears that *sharing concepts* is *not* the differentia of a type of philosophy, but *what explanation* it gives to such concepts. However, Pears does not care to explain himself any further and concludes his essay with the startling remark that Logical Atomism is "in the deepest sense Platonic". However, it seems to be fashionable with some writers to condemn Russell's theory as Platonic, for in *The Philosophy of Bertrand Russell*, Philip Weiner asserts—"a certain sort of Platonism still haunts Russell's theory of truth by logical correspondence in which atomic statements

stalk like ghosts of eternal truth." There is a sort of criticism which blurs essential differences just for the sake of a bombastic and oracular utterance, and the above two charges fall in this category. Of course, such statements have the obvious advantage of being quoted often, and I have not been able to resist the temptation of quoting them myself, even if for the purpose of condemning them. The atomic propositions, sensible and concerned with the essentially empirical, fleeting sense-data, have not the remotest resemblance to Plato's eternal truths subsisting in a trans-empirical limbo of Being and accessible only to rational comprehension - which is knowledge *par excellence*.

Having looked at Logical Atomism through the coloured spectacles of some of its critics, let us make an attempt to survey it impartially. Of course, there will remain the possibility that our own built-in glasses will colour it beyond recognition.


Anyway, a critical estimate of Logical Atomism must start with the conception of *the one perfect language*. We might as well find that the language of *Principia Mathematica* and our ordinary language are not even inter-translatable and that neither is wholly composed of truth-functions, moreover, if other equally appropriate calculi can be found, it would be preposterous to make facts correspond to the calculus of *Principia Mathematica*. In fact, Carnap and others invented a large number of calculi of language with different operators. And there seemed to be no good ground for regarding some of these as the only adequate language-skeletons. This is why the Vienna Circle abandoned the ambitious attempt of passing from language to the nature of the world and regarded any such venture with grave suspicions. But Russell's position may, at least in part, be vindicated by pointing out that no other calculus of language has been so widely occupied, or at least that we do not know of any such. It is also possible to take the edge off the charges of solipsism and of the futility of atomic propositions that have been brought against the theory.

Then there is the further difficulty of regarding everyday language as having the form of the ideal language and the problem whether either the perfect language or ordinary language is wholly composed of truth-functions. If, as we have already suggested, the Atomists can admit a unique type of atomic propositions concerning mental facts, the position seems to be somewhat secure. Further, the material implication of Russell's logic cannot convey the whole significance of 'entailment' as we usually understand it. Strawson discusses other such difficulties which make inter-translation inadequate, if not impossible.

Another objection to Logical Atomism is that when all its aspects are combined, it heads on to the blind alley of solipsism. A logically proper name can be given only to an object of acquaintance with it and these objects are sense-data. And as sense-data are generally regarded as the private possession of individuals, the logical consequence would seem to be that we share no common knowledge of objects, and communication in the form of speech becomes nothing but making faces at each other, if there is any other person at all. Wittgenstein, as is his habit, boldly advocates solipsism, but Russell did not draw the logical conclusions of his premises. But it is not obvious that sense-data should be wholly subjective. In fact, Moore has sometimes suggested that it is possible for us to have the *same* sense data if we occupy the same spatio-temporal and possess similar sensory equipments. And it might plausibly be argued that in other cases, we can have *similar* sense-data, if not exactly identical ones. This consideration takes the edge off the threat of solipsism.

The conception of atomic propositions was itself a difficult one. Such a statement is an exact picture of a fact. "The difficulty, however", Urmson exclaims, "is to know what to do with it when one has got it, especially as we must remember that sentences containing logically proper names are, as Russell himself insisted, intelligible only to the speaker, and presumably to him only while the objects named continue to be for him objects of acquaintance." I am not sure if Russell in his usual matter-of-fact moods would have admitted this, but he did assert that when I am directly acquainted with anything, that experience cannot be shared by others. It is merely a truism that "my experiences are mine", and Russell does not claim too much when he demands its certainty. With the help of logically proper names, we are guaranteed against the possibility of misdescription. But the danger remains that a too careful attempt to say nothing erroneous may result in saying nothing at all.

Ayer attacked Russell's position by pointing out that no synthetic proposition can be purely ostensive. A statement consisting exclusively of demonstrative symbols would be a mere ejaculation, and not a proposition proper. It is, however, doubtful if Russell calls attributes and relations demonstrative in the same sense as 'this' or 'that' is demonstrative. The name of an adjective is demonstrative in the atomic proposition in the sense that it demonstrates or represents the fact exactly, but not in the sense that it is a 'pointer' as the term 'this' clearly is. If Russell did not regard the term "demonstrative" as amorphous, he would not be as vulnerable to the criticism as he would be if he was precise and unequivocal.



However, it does not seem wholly acceptable to the logic of common sense that the results of analysis are the only ultimate reals. If these are real and not distortions of Reality as Bradley speculates, the synthesised facts are no less real, and not in any sense less ultimate as Russell seems to suggest. Terms like "incomplete symbol" and "material implication" have been widely misunderstood, and in this respect Russell may be said to share with Kant a fascination for complicated terminology. But by frequent uses of technical terms Russell does draw our attention to *new* ways of looking at things which the language of small talk or *bellas letters* would have failed to tally to convey. His attitude of sitting, if need be, on the fence and his hatred of the party spirit are some of the rare traits of a true philosopher ; it is only the earnest seeker of truth who is not afraid of remaining in a state of suspended judgment at the cost of earning the name of a poor metaphysician.

Bertrand Russell combined great logical insight with a sound common sense, and whatever be the merits of his particular doctrines, he will remain a great figure as long as philosophy continues to be studied. What Hume jocularly said about how he would meet Charon on the bank of Styx, might have been said by Russell himself. He would implore : "Let me stay awhile. For years I have been trying to open the eyes of the public. If I live a few years longer I may have the satisfaction of seeing the downfall of the superstitions I have fought against." But Charon would certainly lose his temper and burst out in a rage, "You incredible dreamer, *that* will not happen in a thousand years. Do you think I will grant you new lease of life for so long a term as that ? Get into my boat this instant, you lazy, loitering, foolish optimist of a rogue !" And Russell, like his true philosophical forefather Hume, would have twinkled his puck-like eyes and marched off with a whistle,

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# Purformative Utterances

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The doctrine of 'Speech-act' occupies a significant position in contemporary philosophical writings. Roughly speaking Strawson's distinction between a sentence, use of a sentence and utterance of a sentence in his essay "On Referring" (1950) may be marked as the beginning of the study of Speech act.

Let us start with the distinction as made by Strawson. Sentences are merely taken to be sequences of words belonging to a given language. Statements are made by the use of sentence. The same sentence may be used in different contents of utterances to make different statements. E.g. "The sky is clear" is a sentence ; it can be used on different occasions, say for example, on a clear day or on a cloudy day, to make two different statements, one being true, the other is false.

Again the same statement may be made by using different sentences in different contexts of utterances. E.g., If X says "I am hot" and Y says to X "you are hot"—the two sentences are different but the statement is the same viz. that X is hot. If two men simultaneously utter the same sentence, we say they made two different utterances of the same sentence.

J. L. Austin, the author of the doctrine of speech-act, distinguishes between sentence and statement in similar vein. "A sentence is made up of words, a statement is made in words. Statements are made, words or sentences are used." The same sentence is used in making different statements and the same statement may be made by using different sentences in different contexts of utterances but with reference to the same situation.

So far philosophers were concerned with indicative sentences or statements. The characteristic feature of a statement is that it is descriptive and is either true or false. That is, any utterance is to be judged in truth-falsity dimension. They, of course, spoke of other types of sentences like imperative or optative or exclamatory, but the only concern for them was the indicative sentence or statement.

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The logical positivists who advocate the criterion of verifiability bring an objection to this position. They show that much of what pass for statements and have been supposed to be true are really pseudo statements, since they do not stand the test of their philosophical model i.e. verifiability.

Austin, on the other hand, draws attention to a special class of utterances which are neither descriptive nor susceptible of being true or false nor are they subject to verification e.g., if some body says "I promise .....", he does not say anything true or false, he is not reporting or describing the act of promising, but promises with this utterance. Or, if a person says, "I apologize .....", the utterance is not used to describe or report that he is apologizing, but in saying "I apologize .....", he apologizes. Similar is the case with the verbs like to name, to bet, to swear, to appoint and so on. On the contrary, the verbs such as to walk, to write to eat and such others describe the fact that somebody is walking or writing or eating etc. Such descriptions are true or false. The utterances like "I promise," "I apologize", "I swear" etc. are called by Austin "performative utterances" as distinguished from what he calls "constative utterances" which are descriptive and either true or false. Thus there are two types of utterances—those made for saying something and those that amount to doing something — the constative and the performative.

Austin first explores the notion of what came to be called performative utterances in his essay "Other Minds" and refers to them in "Truth" as "performatory utterances". But the nature of performative utterances, its distinction from constative and the rejection of it by the substitution of the doctrine of speech-act have been discussed thoroughly in his posthumous publication "How to do things with words." There are three publications on performative utterance—

1. "Performative Utterances"—a transcript of talk delivered in B.B.C. in 1956 and published in "Philosophical Papers" in 1961.
2. "Performative Constative"—a transcript of Austin's paper "Performatif-constatif".
3. "How to do things with words".

In his "Other Minds" Austin compares the use of sentence "I know" with "I promise" and arrives at the conclusion that none of them are descriptive. In "Truth" he points out that there are many utterances which look like statements, but are not statements at all. They are neither descriptive nor are they true or false. They are "performatory utterances". In "How to do things with words" Austin replaces the term "performatory" by "performative". The term



"performative" is derived from the verb "perform" with the noun "action". The striking feature of the performative utterance is that the uttering of the sentence is a part of the doing of an action. The person concerned does something in saying something. They are straightforward utterances with ordinary verbs in the first person singular number, present indicative active tense, like, 'I bet', 'I promise' etc. They look like statements but do not describe or report facts and are neither true nor false. Utterances of this kind are common enough and not mysterious at all. But we shall presently see that sentences like "I promise" or "He is swearing" are not performative but descriptive.

The next question is : how to identify the performative utterances ? All the examples cited so far assume the same grammatical form viz first person singular number, present tense and active voice. Should we accept this form as the only mark of performative utterance ? If not, is there any other criterion ?

A performative utterance involves the doing of an action. So there must be reference to persons who alone can perform the action. This explains the importance of the first person 'I'. But must a performative utterance always begin with 'I' ? It seems that the first person plural form also may be used e.g., "We promise", "We consent" etc. Moreover, the performative verb may also be used in the second or third person and in the passive voice : e.g., "You are hereby authorised" or "Passengers are requested". So grammatical person or voice does not constitute the differentiating mark of performative utterance.

Again "first person singular number, present, indicative" may be used to describe the habitual behaviour e.g. "I promise only, when I intend to keep it." Or it may be used as a 'historic' present e.g. "On page 49 I protest against the verdict"—this describes the performance elsewhere. Again, some verbs are used simultaneously as performative and as descriptive e.g. "I define a triangle as a three-sided figure."

Thus the 'first person singular number present indicative active' formula fails as a criterion.

Let us see if a grammatical criterion may be found by taking into consideration mood, in addition to the person, number and voice. But this will not do, for instead of saying "I order you to shut the door" one may say "Shut the door", where the latter utterance also is performative like the former. It is but natural to think that the verb in the imperative mood is always performative. But the verb used in the imperative mood does not clearly indicate what act is going to be performed with this utterance, e.g. the saying "Shut the door" may



be a command or a request and it is not possible to detect which particular act this utterance performs. Moreover, as Austin says, imperatives do not form a class of utterance which is important philosophically.

There is another important clue to the performative. If there is an asymmetry between the use of the verb in the first person singular number present tense and the use of the same verb in other persons and other tense, this asymmetry suggests the performative nature of the verb e.g. "I bet" is performative but "he bets" or "I betted" are descriptive. This asymmetry does not arise in the case of other verbs e.g. there is no such asymmetry between 'I run' or 'he runs'. But Austin says "this is not a grammatical criterion exactly". Moreover, in spite of the asymmetry some utterances are not to be regarded as performative e.g. "I state that", which satisfies the asymmetry between first person and other uses is not to be considered as performative. It seems that there always remains the possibility of confusing two types of utterances like "I state that" and "I bet that".

Let us now turn to vocabulary and see whether there are some words which can testify performative utterances. There are some special words which look like performative, e.g. "off-side", "promise", "dangerous" etc. But vocabulary fails, since we may get the performative without the 'operative' words, or 'operatives' without the utterance being performative. Thus instead of "I promise" we may say "I shall" which is performative. Again in a match a spectator can utter "off-side" but the utterance is not performative, since only the umpire has the right to declare "off-side". Sometimes the word 'hereby' serves to indicate the performative e.g. "I hereby authorise". But the "hereby" formula is generally used on formal occasions and not for ordinary purposes.

Thus neither grammar nor vocabulary can suggest a definite criterion for performative utterances. Let us see whether the non-linguistic devices used in our speech like tone of voice, cadence, emphasis, gestures like wink, frown, shrugging etc. can help us in detecting the performative nature of utterance. It is true that in the use of our language these accompanied devices can suggest whether the language used is a request or an order or a warning. But these devices are vague and uncertain, and as such they cannot express the meaning of the utterance properly. Moreover, they are features of spoken language, not of written language.

From the above discussion it is clear that neither grammar nor vocabulary nor any non-linguistic device can suggest an identifying mark of performative utterance. Austin observes that there may be a complex criterion involving both grammar and vocabulary.

Let us go back to our initial formula viz. 'first person, singular number, present indicative tense active voice'. The advantage of this formula is that the implicit feature of the utterance or speech is made explicit. The special performative-looking words that enter into such formula also make the speech explicit. "Making explicit" does not mean that we are describing or stating our action. Austin introduces the term "explicit performative" as the identifying mark of performative utterance which, he says, seems to be the "most successful" of numerous speech-devices. When we utter the explicit performative formula, we make clear what action it is and how it is to be understood.

Attention may be drawn to some primary utterances like, "Turn right," or "Thunder" and so on. Austin describes these utterances as primitive performative. Here the meaning is not clear. We cannot understand whether the utterance "Turn right" is an order or a request, "Thunder" may be a warning or prediction. These primary utterances are earlier, and the explicit performative is a later development. In support of the explicit performative formula Austin points out that as language develops it needs precision which cannot be achieved without clearness of meaning. It is the explicit performative formula which makes language clear and precise, devoid of any ambiguity or equivocation.

There are two standard forms of such explicit performative utterance ;

- 1) The verb is used in the first person singular number present tense and active voice, e.g. "I promise", "I bet".
- 2) The verb is used in the passive voice and in the second or third person e.g. "You are authorised", or "Passengers are requested".

This type is generally used in writing with signature appended and on formal occasion or in legal documents.

To decide whether an utterance is performative or not, we should see if the utterance in question may be reduced or expanded into either of these forms. E.g. "guilty" uttered in a certain context is equivalent to "I find him to be guilty" which is performative.

But both these standard forms have a constative look. Can we suggest anything so as to mark the utterance as distinctly performative? In order to identify the performative utterance Austin tries to find out a list of verbs that can appear in these standard forms and can be regarded as performative verbs. With the help of a dictionary and by using the test of asymmetry between the use of the verb in first person present tense and the use of the same verb in other

persons and other tenses, he prepares the list. When the list is complete, we find that the verbs fall into certain well-marked classes, which not only identify performative utterances but also indicate what particular type of action is being done by that utterance. These verbs are called explicit performative verbs.

There are some verbs like 'acquit', 'hold', 'find' etc. by which we deliver verdict and the utterance is called verdictive. Using the verbs like 'dismiss', 'appoint', 'name', 'order' etc. we exercise power and make utterance called exercitive. With the verbs like 'promise', 'bet', 'swear' etc. we commit ourselves in various ways and the utterance containing those verbs is called commissive in Austin's terminology. By uttering 'apologize', 'thank', 'welcome' etc. we perform social behaviour and this class goes by the name behabitive. By saying 'argue', 'postulate', 'affirm', 'deny' etc. we perform acts of exposition and the utterance is called expositive.

When a judge issues the utterance like, "I hold . . . ." or "I find . . . .", he delivers his verdict and the utterance is verdictive. Verdictives can be uttered by a judge or a jury, arbitrator or umpire. These consist in the delivering of a finding as to some fact or value. But they need not be final, they may be an estimate or appraisal.

If an employer says to his employee, "I dismiss you", he is exercising his power. This type of utterance is called exercitive. It is a decision as opposed to a judgement. Its consequences affect others that they are 'allowed' or 'not allowed' to do certain acts. In the example given above one is not allowed to come when he is dismissed.

When somebody says, "I promise . . . . ." or "I undertake . . . . .", he is committed to do something. This type of utterance is called commissive. The commissive is 'an assuming of an obligation or declaring of an intention.' Here the speaker commits to do a certain course of action by saying something.

When one issues the utterance like "I congratulate" or "I thank . . . .", one is reacting to other people's behaviour or conduct. This type of utterance is called behabitive. The behabitive is 'the adopting of an attitude'. It has to do with attitudes and social behaviour.

If a person says "I reply" or "I argue . . . .", he is using expositives. The expositive is 'the clarifying of reasons and arguments'. These utterancss indicate how we are using words.

Even if we can discover the explicit performative verbs and explicit performative utterance, there still remains the question : Does the utterance lead to act ? E.g. the utterance, "I promise that I shall be there", is an explicit performative utterance containing the explicit performative verb 'promise'. But if this is not uttered 'seriously' should we regard it as performative ? Again, if the speaker is not heard by the hearer or the hearer cannot understand the speaker's intention—has the act of promising been done ? When somebody says "I name the ship"—when he has no authority to name the ship, should we say that the act of naming has been performed ? Many other such irregularities can occur, which in turn make the performative utterance 'null and void'.

So performative utterances are not exempt from criticism. It has already been suggested that they are not to be assessed in truth-falsity dimension but they can be criticised from what Austin calls "happiness-unhappiness" dimension. When the performative utterances fail to achieve intended result they become unhappy. To make them happy a good many other things have to be right and followed. So Austin formulates some conditions to be satisfied and rules to be observed, violation of which make the performative utterance unhappy. He thus introduces the doctrine of 'infelicity' to deal with the unhappiness of the performative.

The basic condition of the performative utterance is that the utterance must be issued in ordinary circumstances and must be used seriously. If not, there would be no performative utterance at all. As for instance, the so-called performative utterance uttered by an actor in the stage or spoken in soliloquy are not to be regarded as performative.

To be happy, the performative utterance must follow a number of rules : There must be an accepted conventional procedure for the issuing of our performative utterances. The appropriate person must issue the utterance in appropriate circumstances. The procedure must be carried through completely and correctly by all the participants.

If these rules are not followed, the act purported by the utterance is not achieved; it is void or without effect. This type of infelicity is known as Misfire. To this class belongs other infelicities like Misinvocation, Misapplication, Misexecution, Flaws and Hitches.

If somebody says to his wife, "I divorce you", the act of divorce cannot be achieved if there is no accepted convention of such a procedure of divorce. Austin has not named this type of infelicity.

If somebody says "I appoint you" when he is not entitled to appoint, or the person has already been appointed or some one else has been appointed—then the utterance is unhappy. This type of infelicity is called Misapplication.

When the procedure is not executed correctly and completely, the performative utterance is subject to the infelicity of Misexecution—which may be either Flaws or Hitches. Generally the use of inexplicit formula or uncertain reference gives rise to Flaws. If one says "My house....." when he has two, it is a case of Flaw. The utterance "I bet you....." is subject to the infelicity of Hitches, if nobody says "Done",

But there is another way in which performative utterance can go wrong. The person who issues the utterance must have the requisite thoughts or feelings or intentions and must conduct himself accordingly. Otherwise there would be an 'abuse' of the procedure or 'insincerity'. Here the act is performed but 'hollow' or 'professed'. If somebody says, "I promise....." but does not intend to keep it, the act of promising is done, though there is no intention to keep it. So it is 'insincere'. Again when one utters, "I congratulate you for success" without being pleased or believing in his credit, he congratulates, but the congratulations are hollow.

The utterance "I advise you" may be an abuse of the procedure if I do not think that it will suit you (i.e. I do have the requisite thought).

Misunderstanding is a type of infelicity to which all utterances are probably liable. When somebody says something he may not be heard by the hearer or the hearer may not understand his intention or he may issue the utterance in such circumstances for which he is not responsible—in all such cases the infelicity is Misunderstanding.

Austin, however, points out that the list of infelicity is neither complete nor mutually exclusive. Sometimes it becomes difficult to find out the particular infelicity to which a particular utterance belongs. E.g. if somebody says "I appoint you", he may not have the authority to appoint, or the appointment has already been made, so the circumstance is inappropriate or the person may be inappropriate. So how could we decide the particular infelicity in this case? Austin, admits that sometimes it may be difficult to find out the particular infelicity involved in a particular case. But he says that "clearly there are six possibilities of infelicity."

So far we have discussed after Austin the notion of performative utterance and its infelicity. In his own language "That equips us, we may suppose with two shining new tools to crack the crib of reality ;

“two new keys in our hands and of course two new skids under our feet.”

Though the notion of performative utterance is exclusively Austinian and seems to belong to his constructive part of philosophy, he himself was critical of the idea and abandoned it in the last half of his book “How to do things with words.” The main reason for such rejection is the failure to find out a grammatical criterion for performative. Even the explicit performative form can do no better, for many utterances in the explicit performative form are not performative but descriptive e.g. “I state that .....”, satisfies all the conditions of a performative, though it is descriptive. So the antithesis between the performative and constative breaks down. Austin therefore “makes a fresh start on the problem” by substituting the doctrine of Speech-Act for the notion of performative utterance.

In spite of all the limitations and failures of the performative utterances, the notion and its antithesis with the constative has opened a new horizon in the recent philosophical thought. Austin starts with the notion of performative utterances that in some cases when we say something we do something. But afterwards he realizes that “doing an action” is a very vague expression. Whenever we issue an utterance whether performative or constative we do something. Speaking is something we do. This scope of philosophy of language is extended now-a-days in this direction i.e. in speaking a language one is carrying out a variety of performances. Searle points out that all linguistic communications necessarily involve such speechacts. According to him the basic unit of linguistic communication is not an abstract entity like a word or a sentence, but the production of a concrete speech—act. Strawson has discussed the presupposition of speech—act. That is what are the conditions that make the linguistic doing a non-linguistic doing as well. Besides Strawson and Searle there are many modern thinkers who have engaged themselves in the study of speech-act.


The notion of performative utterance is philosophically significant, since it throws light in a new direction on some traditional problems like knowledge, truth and value-judgement.

Austin, seems to point out that the verb ‘to know’ is not descriptive as it is traditionally supposed, but performative. When somebody says, ‘I know... ..’ he does not describe or report about his mental state but “gives his word.” The expression “I know” performs the same function as “I promise.” As in the case of “I promise” the speaker does not report or describe about his promising but expresses

his intention to keep it, so also in the case of "I know" the speaker does not report about his mental state, but gives his word, his authority. To consider "I know" as a descriptive phrase is to "commit a descriptive fallacy."

The traditional opinion about 'True' and 'false' is that they are descriptive. Strawson has objected to this view. He advocates the performative role of 'true'. By analysing the use of the word 'true' in ordinary language Strawson observes that 'true' is ordinarily used as a performative expression. As in uttering the performative "I promise" the person concerned does not describe or make a statement about his promise, so also when anybody says that "the statement 'the wall is white' is true"—he does not describe the statement but performs the act of agreeing with accepting or endorsing that "the wall is white".

The traditional thesis with the statement of value is that they are logically distinct from the statement of fact and it is not possible to derive the 'ought' from 'is'. Austin himself points out "I promise" entails "I ought", "I promise but I ought not" is parallel to "it is and it is not". Searle has explained this position in detail in his essay "How to derive the 'ought' from 'is'". The utterance "I promise" is uttered in empirical conditions, so it is a factual statement. But when "I promise" is uttered seriously, satisfying all the conditions of a happy performative, the speaker is bound to keep the promise. The speaker places himself under obligation to keep it i.e. he ought to keep it.



# The Revolution in Modern Physics and its impact on Contemporary Philosophy

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## INTRODUCTION

The relationship between Physics and Philosophy has been elegantly expressed by defining the former as the study of the nature of physical reality and the latter as the study of the nature of reality. Any significant change in our knowledge of physical reality will inevitably lead to a corresponding revaluation of our philosophical concepts.

Contemporary Physics has brought about radical transformations in the entire human conception of physical reality from the macro-cosm of the ever-expanding universe to the micro-cosm of the atom. The concepts of Classical Physics, which were hitherto held to be unquestionable and incontrovertible, turned out to be incorrect, or at best inadequate, to explain some of the observed physical phenomena.

New interpretations of the natural laws had to be formulated. While the earlier ambiguities and contradictions were resolved in the process, new problems, however, have cropped up in the wake of the new Physics which are yet to be solved. These new fundamental tenets of Modern Physics have not only revolutionised the world of science and technology, but also have very important bearing in the world of philosophy with far-reaching social consequences.

There is a general awareness of these new developments, particularly about their technological applications as in the nuclear bomb or in radio-therapy. Concurrent with this is also a general belief that determinism and causality have been discarded from science and that the real nature of physical reality is unknowable and the universe can only be explained by means of a set of abstruse mathematical symbols.

To ascertain how far these notions are true and to understand the exact nature and the extent of these radical changes in contemporary Physics and their philosophical consequences, a brief survey

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of the fundamental postulates of Classical Physics and its limitations is necessary at this stage.

## **CLASSICAL PHYSICS & ITS FAILURE :**

### **Fuudamental Premises :**

The entire edifice of Classical Physics was built up on the indubitable and infallible Newtonian foundations of determinism and causality, continuity and representation of all phenomena by motions in frameworks of Absolute Space and Absolute Time, governed by the Principle of Least Action. It was held as an axiomatic truth that all objects could be assigned unique locations in Absolute Space and all events ascribed unique positions in an everflowing stream of Absolute Time. Mass & Energy were separately conserved in all phenomena, only transformations from one form of matter or energy to another form of matter or energy were permitted. These basic concepts were further held to be amenable to verification within limits of experimental error by actual experiments and were independent of their relation to the observer. Mass was supposed to be composed of indivisible atoms and radiation of wave motions in the hypothetical medium of ether.

Modern science may, from a human angle, be divided into three worlds : (i) the world of astronomy & astrophysics—the macrocosm—where time is measured in millions of years and distances in light-years, the scale of measurements being millions and billions of times of that of the man-sized world; (ii) the man-sized world or the gross common-sense world (the adjectives 'terrestrial', or 'mundane' or 'human' do not somehow connote the same idea) where objects are comparable in size with the human body and where time is measured in hours and minutes and distances in kilometres or metres and finally (iii) the world of the atom—the microcosm—where time is measured in millionths & billionths of a second & distances in millionths & billionths of a centimetre.

Classical Physics was almost infallible in tackling all the observed phenomena in the man-sized world and till about the last decade of the 19th century was also able to explain most of the observed phenomena of the macro-cosm and the micro-cosm, albeit with limited success in some instances.

But there after while it was not completely successful in the macro-world, its failure in answering the problems of the micro-world was total & colossal. This anomalous situation also provided a testing ground for the validity of a priori knowledge. If a priori

knowledge is found to be true both in the macro-world and in the micro-world, its existence is still not established beyond doubt. But if it is found untrue in either or both of these worlds, then its existence is undoubtedly disproved and it is then reduced merely to an empirical knowledge of the man-sized world. The actual intuitions of the rationalists on scientific topics however, were also found to be applicable to the man-sized world only. These, therefore, fail to conform to the Kantian criteria of a priori knowledge i.e. necessity and universality.

While Classical Physics provided a quantitative specification of the Law of Gravitation, it could not explain its nature and method of its propagation through space. Again while it provided an exact set of laws governing the propagation of electromagnetic radiation (e.g. light), it had to introduce a hypothetical medium for its propagation, called 'ether', whose only certain sui generis property appeared to be that it transmitted radiation. The ingenious experiment of Michelson & Morley demonstrated the untenability of its assumed existence. The attempts of Fitzgerald & Lorentz to provide ad hoc explanations were not all too successful, although subsequent developments proved their mathematical analysis to be substantially valid.

#### **THE THEORY OF RELATIVITY :**

The solution was provided by Einstein's Special Theory of Relativity which inter alia stated that the free space velocity of electromagnetic radiation would be the same on two different reference frames moving with constant relative velocity. This and his later General Theory of Relativity led to significant deductions including the law of equivalence of Mass & Energy, the description of all events in a four-dimensional space-time continuum, the establishment of the free-space velocity of light as the maximum velocity of mass energy in any form and the attribution of gravitational forces to properties of the geometry of empty space. Absolute Space and Absolute Time were declared non-existent, and physical properties of matter like mass, momentum & energy were stated to be all different forms of its "inertial" quality, which could be expressed in the frame-work of a four-dimensional non-Euclidean geometry.

We can no longer cling to the well-defined Classical distinction between space & time which have now been amalgamated together into a four-dimensional continuum, nor can we divide this continuum into past, present & future as in an Absolute Time frame. However,

causality & determinism, continuity and the description of phenomena; by motions in space and time were still valid, but on a new space-time framework and with new interpretations of the laws of Classical Physics.

Thus Relativity Physics in a way supplemented and enriched Classical Physics. The incompatibilities and contradictions of Classical Physics were due to the facts that the space-time continuum had been split up into two distinct entities, Absolute Space & Absolute Time. It was observed with some relief that the mathematical Laws of Classical Physics—Euclidean Geometry & Newtonian Mechanics—were sufficiently valid within the boundary conditions of our man-sized world and were very good approximations of the more rigorous mathematics of Relativity Physics.

### **The Quantum-Theory :**

During the last decade of the 19th century and in the beginning of this century physicists were faced with a number of paradoxes in the world of the atom which defied all attempts at reconciliation with the postulates of Classical Physics.

The first and foremost problem was that of (electromagnetic) radiation, which Classical Physics believed was a continuous wave phenomenon. The inexorable Laws of Classical Physics predicted that all the energy of bodies must be transferred from matter to radiation, which leads to an untenable result quite contradictory to observed facts. This has been dramatically described as the "ultraviolet catastrophe".

The answer to the problem was provided by Max Planck in his Quantum Theory of Radiation which, expressed in simple terms, stated that radiation is not a continuous wave motion but consists of discrete "energy packets" or quanta, whose energy levels were "quantised" i.e. could assume only discrete values of integral multiples of a universal constant. Thus the principle of continuity of Classical Physics had to be abandoned.

Einstein's Theory of Photoelectric Emission lent further support to this atomicity of radiation (a light quantum was named as photon) and confirmed that energy transfers always take place in complete quanta.

It was, however, observed that while the Quantum Theory of Radiation could successfully explain most of the anomalies hitherto encountered, it was not successful in explaining interference and diffraction, which the Classical Undulatory (or wave) Theory had

been able to do with remarkable distinction. This matter will be discussed later in further details.

Another intriguing challenge faced by Classical Physics was in explaining the structure of the atom. Thompson & Lenard's discoveries confirmed the electron as a universal constituent of all matter. Rutherford's Planetary Model of the Atom with a positively charged nucleus concentrated in a very small volume at the centre with the electrons revolving around in various extra-nuclear orbits led to startling contradictions. Classical Physics could neither allow the electrons to be at rest at extra-nuclear locations or they would be drawn towards the nucleus and be annihilated, nor permit the electrons to be in perpetual motion on extra-nuclear orbits, for then they would lose energy through radiation and gradually spiral into the nucleus to be annihilated.

Bohr overcame the problem by introducing the quantum concept of energy in the atom itself. The electrons were permitted to revolve perpetually in certain specified "non-radiating" extra-nuclear orbits, whose energy levels were "quantised" and were also permitted to "jump" from one orbit to another under certain specified conditions thereby emitting or absorbing complete quanta of energy. Thus "discontinuity" in nature was further confirmed.

A landmark of momentous import in Physics was the discovery of the Law of Radioactive Disintegration by Rutherford and Soddy, which stated that radioactive decay was spontaneous and not determined by the external environmental conditions. Further, although the rate of disintegration of a particular element was found to be constant, there was no indication as to which particular atoms would disintegrate at any instant. This discovery seemed to banish causality & determinism from the world of Physics, or at least that of Atomic Physics.

This abdication of causality appeared to be even more complete with Einstein's synthesis of the Quantum Theory with the Laws of Radioactivity, which extended this spontaneity to radiation as well.

Thus the fundamental postulates of Classical Physics, viz. determinism & causality and continuity & uniformity in Nature, seemed to be invalid at least in the domain of the infinitesimal which was governed by statistical laws only. However, we are still able to predict the phenomena with almost the same precision, as though the fate of every individual atom were known.

Perhaps the greatest challenge to Classical Physics came from Heisenberg's Principle of Uncertainty (or Indeterminacy), which

certainly had far-reaching consequences both in the realm of Physics & that of Philosophy. In simple terms, the Principle enunciates that our experimental explorations of nature do not admit of absolute precision owing to the fact that nothing smaller than a complete photon can be detected in nature. The greater is the degree of accuracy we achieve in our knowledge of one particular aspect of a phenomenon (say the position of an electron), the less will be corresponding accuracy of our knowledge in regard to the other associated aspects (viz. the momentum of the electron in the instant case). The product of the uncertainties of our knowledge can never be less than 'h', Planck's celebrated constant, however, precise & sophisticated our experimental arrangement may be.

We have already seen that the Quantum Theory of Radiation could not provide satisfactory explanations for diffraction & interference phenomena, which could only be understood if we accept an Undulatory (or Wave) Theory of light. Further experimental evidence seemed to justify this dual nature of light. Bohr's Principle of Complementarity showed that these two sets of properties, viz. those of particles (quanta) and those of waves, are never exhibited simultaneously.

This dualism was later extended by de Broglie to the elementary particles of matter, specially the electrons, which were also found to exhibit wave & particle behaviour in different circumstances, similar to radiation.

### **Quantum Mechanics :**

Three new systems of mechanics have been developed from the Quantum Theory to study & explain the behaviour of the infinitesimal world i.e. the microcosm of the atom. It is interesting to note the formal mathematical equations of these theories appear as extensions of Classical Mechanics in a restricted sense.

#### **(i) Heisenberg's Quantum Mechanics :**

Heisenberg developed a completely mathematical approach to the problem, which showed that Classical Mechanics was merely a special case of Quantum Mechanics under certain boundary conditions as encountered in our every-day man-sized world. The applications of Bohr's Correspondence Principle, showed that in the man-sized world the discontinuity & the uncertainty, which are inevitable and of vital importance in the infinitesimal world, are insignificant and merge into the continuity and the determinism of Classical Physics. Application of his statistical laws based on probability & uncertainty provided consistent results with observed facts.

## **(ii) Schrodinger's Wave Mechanics :**

Developing the wave aspect in the behaviour of radiation & particles, Schrodinger devised a system of mechanics which was found to be a pictorial representation of Heisenberg's Quantum Mechanics. The waves were interpreted as waves of probability, the intensity of the waves at any point giving a measure of the probability of a photon (or particle) occurring at that point.

However, it must be noted that these waves are not physical waves, but are mere mental constructs of our own in our efforts to explain the observed phenomena.

## **(iii) Dirac's Matrix Mechanics :**

Of the three forms of Quantum Mechanics, Dirac's system is of the most abstruse mathematical form.

Dirac assumes nature to consist of three domains, viz. the substratum where actual events take place and about which we can form no mental picture, the phenomenal world and the observer. Events in the substratum are accompanied by events in the phenomenal world, which we represent in time & space and by our experiments we drag up activities from the substratum into phenomenal world. But in doing so we alter the world.

A formal theory of a very complete kind with elaborate mathematical analysis, Dirac's system shows that Heisenberg's Quantum Mechanics & Schrodinger's Wave Mechanics are special cases of this system.

A remarkable proposition in Dirac's theory is that events in the phenomenal world are *not uniquely* associated with events in the substratum. Different events in the substratum may result in precisely similar phenomena to our observation.

The uniformity of nature is thus discarded at the very outset and causality abandoned from the phenomenal world, but is retained in our knowledge of physical reality.

For, the mathematics of all the three systems of Quantum Mechanics are completely deterministic in form. But this determinism applies not to the events themselves, but to our knowledge of the events. Again, as we cannot pass from the phenomenal world to the substratum of actual events, we can never know whether causality governs the events or not.

## PHILOSOPHICAL CONSEQUENCES OF MODERN PHYSICS :

At first sight, the important consequences of these new discoveries of Physics would appear to be as follows :

- (i) The uniformity of nature disappears from the phenomena
- (ii) The processes of nature do not admit of representation in a frame-work of space and time
- (iii) Precise knowledge of the nature of physical reality is impossible to attain
- (iv) Determinism & causality become invalid so far as nature is concerned
- (v) Complete precision may only be achieved by uniting the observer & the object

Classical Physics was based on the Newtonian claim that it had not taken recourse to any assumptions or speculations, which were not direct consequences of experimental findings. The advent of Relativity and Quantum Mechanics exposed the limitations of Classical Physics and revealed that all scientific theories are proposed speculatively and pursued deductively with respect to their various consequences so that they may be put to indirect experimental tests and corroboration, as Einstein so lucidly explained. In other words, scientific knowledge never stems directly from observation or experiment, but is attained by speculatively proposed theoretical construction or axiomatic postulation, which may be indirectly verified by experiments vis-a-vis the consequences deduced from theory.

The basic assumptions of any scientific theory are necessarily philosophical in character, being either ontological or epistemological. Einstein's Relativity has modified the philosophy of modern physics in its ontological aspect by a revolutionary change in our idea of space and time and their relation to matter. Quantum Mechanics, particularly Heisenberg's Principle of Indeterminacy, has radically altered the epistemological aspect, by introducing an element of uncertainty inherent in our knowledge of the infinitesimal world as we have already seen. Furthermore, the transmutability of the fundamental elementary particles demonstrating the inherent unity of matter and energy and the peculiar type of determinism and causality admitted by Quantum Mechanics brings back, as we shall see, the old Aristotelean concept of potentiality into Physical science although in a modified form.

The fundamental difference between Classical & Relativity Physics on the one hand & Quantum Mechanics on the other is that the latter

introduces the concept of probability into the definition of state of any object at any given instant of time, which the former do not admit. The concept of probability (and chance) was restricted in Classical & Relativity Physics to the epistemological relation of the observer in the verification of what he knew by the theory of errors, which determined the degree of accuracy of observations.

Perhaps the most fundamental question which interests the contemporary philosopher is the status of determinism and causality in Modern Physics. These two terms have been so often used and abused, with so varied connotations, that we are free to choose amongst a host of definitions for either. Accepting for the moment that "determinism" denotes the "stronger" and more comprehensive meaning, we note that every deterministic system is causal, but not vice versa.

Now, the relation between the states of a given isolated physical object or system at different times may be one of three following types :

**(i) Temporal Succession :**

Where there is no necessary connection whatever with not even a probability that a given initial (or earlier, state will be followed in time by a specifiable future state. Hume would have us believe that all natural phenomena conform to this type, which science obviously does not accept.

**(ii) Teleological Causation :**

Where there is a necessary connection between the initial/earlier and the following states, the changes of the system in time being determined by the final stage or "goal". The Knowledge of the necessary connection may only be obtained by knowing the future state. Aristotle believed that all causal relations were teleological, and that the future determines the past. It may be shown, that at least in some instances, the "proximate cause" as well as the "ultimate cause" reside in the past and not in the future and that the entire polemic is a mere jugglery of terms. Anyway, teleological causation cannot throw any new light on the ultimate problem as Jeans has observed.

**(iii) Mechanical Causation :**

Where there is a necessary connection such that given the knowledge of the initial (or earlier) state, the future state can be deduced & predicted.

This gives rise to two possibilities, depending on whether or not the concept of probability is used (or has necessarily to be used) in defining the state of the system at a given time.



We have seen that in Classical and Relativity Physics, probability is absent and we may consider this to denote the "stronger type" of mechanical causation. Whereas, in Quantum Mechanics, where probability ( & uncertainty ) is a *sine qua non*, we have the "weaker type" of mechanical causation, which however is *still present*.

Thus, in Newtonian, Einsteinian & Quantum Mechanics in short the entire domain of Physics, mechanical, rather than, teleological causation exists. But in view of the definitions we have chosen "determinism" would seem to exist only in the first two, not in in Quantum Mechanics.

The momentous philosophical significance of the introduction of this "weaker type" of mechanical causation lies in reconciling the old Aristotelean concept of potentiality in a new form with the ideas of Modern Physics.

A moot point in this regard is our earlier observation while discussing Bohr's Correspondence Principle that the uncertainty and probability relations of Quantum Mechanics become significant only when the associated quantum numbers of the system are small as in the atomic world. These relations lose their significance and become negligible when the quantum numbers are large as in our gross-common-sense or man-sized world, and Quantum Mechanics with its basically "weaker type" of causality gives rise, as a special case of itself, to Newtonian and Einsteinian Mechanics with their "stronger type" of causality and once again determinism reigns supreme.

Quantum Mechanics has a further important epistemological consequence—the relation between the observer, the object and the rest of the universe. The definition of mechanical causality explicitly & implicitly apply to an "isolated system". This qualifying criterion may be satisfied, or approached at least theoretically, in Newtonian & Einsteinian Mechanics. But the introduction of the concept of probability negates in principle this condition of an "isolated system". Consequently, only if the entire universe is included in the object of study, may the condition of an "isolated system" be satisfied even for the "weaker" form of mechanical causation.

In the Old Science, subject and object were held to be entirely distinct and independent of each other.

Relativity discredited this distinction and showed that the knowledge which an observer forms is to a certain extent subjective, in that it is dependent on his relative velocity with respect to the object.

Quantum Mechanics establishes a further relationship between subject & object—the coupling produced by a single quantum (or a number of quanta) between the observed & the observer. Complete objectivity may therefore be gained only by unifying subject & object to an indivisible system.

It must also be borne in mind that the emission or the absorption of a quantum in the microscopic world radically change the nature of the system. Therefore no exact & continuous knowledge of a microscopic system is possible.

### **SOME FUNDAMENTAL PROBLEMS OF PHILOSOPHY—**

#### **A REVIEW :**

Thus we have arrived at a stage where we have been able to conjure up a complete and formal mathematical system to analyse and predict phenomena at least in principle, but we have not been able to understand them—why & how the phenomena occur. All attempts at mechanical models representing events in space & time must fail for the ultimate processes of nature neither occur in nor admit of representation in space & time and are for ever beyond our comprehension. Perhaps we shall never be able to understand the nature of physical reality, but only study our own observations on this.

Some pictorial representations of certain particular aspects of the workings of nature have been developed in a way intelligible to our minds. But these only represent partial aspects of the truth in limited spheres, as for instance, the particle (Old Quantum) theory & the wave theory. And we must know which picture to choose when negotiating a particular aspect of study. Even so, certain fundamental questions of reality are so general that neither representation can provide the correct answer.

#### **Probable Reasoning :**

If our efforts to discover the true nature of reality are doomed to failure, the best we may do in the circumstances is to abandon our quest for knowledge of the ultimate reality and proceed on the basis of the most probable of the various alternatives before us, much on the lines of Leibnitz's theory of Probable Reasoning. In selecting from among the various alternatives we may depend upon the Simplicity Postulate, where no other guide is available. This postulate states that which is simpler is more likely to be true. The profound belief amongst most physicists & philosophers that the fundamental laws of

nature are very often been established in the course of the history of physics. In fact the mathematics of Quantum Mechanics are extensions of Classical Mechanics in a more general & rigorous form and many of the simple generalisation of Classical Mechanics like the Principle of Least Action are still valid although on a modified background.

### **Appearance & Reality :**

Our source of certain knowledge is our sensations, vision being the most important. The only salient premise that emerges from our sense experience is that the material world is not merely a private mental construct of our own. Whether it has an existence of its own independent of mind is uncertain at this stage.

Contemporary physics rejects materialism in so far as that it admits of realities not directly cognisable to our senses. Thus this material world comprises the entire world of appearance but not the entire world of reality. In fact, our knowledge is strictly limited to the consequences in the world of appearance of the actual events in the world of reality. Modern physics, however disagrees with the philosophers who regard the world of appearance as an illusion. The phenomena are considered to be only these aspects of the real world, which affect our senses. The error of Classical Physics lay in its inability to distinguish between appearance and reality. However, as we have already seen, causality is banished from the world of phenomena, but still applies to our knowledge of the events.

### **Mind vs Matter :**

Physics had never fully supported Descartes' hypothesis of the dualism of mind and matter as two *distinct* realities, totally independent of each other. Nor could physics concure with the division of material properties into primary or intrinsic properties and secondary or perceptible properties or with Berkeley's stand that matter has no independent existence except in the mind and the whole cosmos is an idea in the Divine Mind. In fact, science frowns upon the very distinction between mind and matter, which Russell has so succinctly dismissed as "illusory" and "serving no useful purpose". Whitehead concluded that cotemporary science and philosophy have no place for, and indeed have no need of, the concept of "matter". Logical positivists like Carnap tend to agree with these views.

Heisenberg, however, argues from his generalisation of Bohr's Principle of Complementarity that there is no compelling reason for nor advantage in discarding any of our common-sense concepts, if we are aware of limitations and employ them with adequate care and caution. But even if the distinction between mind & matter is removed, the dispute between the materialists (mind is material) and the idealists (matter is mental) would still perhaps remain.

The Theory of Relativity in demolishing the 'materialist' premises of Absolute Space of Absolute Time of Newtonian Mechanics have weakened the position of the Materialists. The forces of Classical Physics and the cognate concepts of momentum and gravitation all have proved to be mental constructs in our efforts to understand nature and are not really objective. Thus while gravitation lends itself to be expressed in a set of simple equations of Pure Mathematics, its nature cannot be clearly described in purely non-mathematical & physical terms

Quantum Mechanics even more than Relativity establishes that to our understanding not only the matter and mind are non-independent & not-distinct entities, but also that we shall never be able to prove with certainty whether 'matter' exists in the sense the materialists define it. We have seen that the particle-picture (materialist) and the wave-picture (idealist approach) are complementary and equivalent. Further analysis of this aspect of Modern Physics seems to indicate an objective idealism somewhat reminiscent of Hegel.

The question of existence of Free-will seems to be easily explained on the basis of Modern Science. Free will appears to be an illusion. The Free will which its protagonists claim to possess is merely unconscious determinism. Our actions are determined by judgements, our judgements by our inner character and external influences and our character by our previous actions and experiences—in fact, all our actions seem to follow a deterministic chain. Even our so-called capricious actions are determined by our strongest motive, which is also a consequence of our past experience and present circumstances.

We have already noted that the indeterminism of Modern Physics is merely superficial in the sense it resides only in phenomena as observed by us and not in the reality. In fact, Modern Physics seems to tell us that these distinctions between mind and matter, and determinism and free will, as have so long been defined, are illusory & meaningless. It is perhaps merely a question of terminology.

## CONCLUDING REMARKS :

Strictly speaking no conclusion may be derived from our foregoing discussions.

We may merely observe that these and other complex problems of ontological & epistemological philosophy follows as consequencss of the revolution that has been wrought in Modern Physics, in which the final word is yet to be pronounced. Or will there ever be a final word ?

Again, one must not be tempted to hold the New Physics as infallible and sacrosant, as they thought Classical Physics to be only a few decades ago. We have certainly not arrived at any "final" knowledge.

While many of the philosophical conclusions of Classical Physics are in the melting pot and new ideas are developing in the backdrop of the New Physics, one hopes that man's unending quest for knowledge will someday lead to a more comprehensive understanding of the nature of reality.

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# Some Alleged Metaphysical Implications of the Special Theory of Relativity†

T. K. Sarkar\*

## I

In this paper our main purpose is to ascertain the tenability of the views of some very competent thinkers regarding the so-called metaphysical implications of the Special Theory of Relativity‡ (STR).

Our task is *not* expository and we do *not* intend to criticize the STR either from a mathematical or from a physical point of view [ as for example Essen<sup>1</sup>, Terletska<sup>2</sup> etc., have done ] but we are only interested in ascertaining what *logically* follows from the STR *granted* its truth. Consequently, before starting with the actual discussion of the problem we shall specify the two basic assumptions of the STR and time-measures of a stationary frame of reference S to that of S' which is moving relatively to S.

The two special assumptions underlying STR are the following :

- (i) The velocity of light *in vacuo* is  $c$ , it is a constant and is the same in all *inertial* frames of reference ;
- (ii) If relatively to S, S' is a uniformly moving coordinate system devoid of rotation, then natural phenomena run their course with respect to S' according to exactly the same general laws as with respect to S. This statement is called the *principle of relativity*.

If we grant these assumptions and accept Einstein's definition of simultaneity in terms of 'coincident light-rays' then it follows as a logical consequence of the STR that the notion of *absolute simultaneity* has no physical significance and two events which are simultaneous in one frame of reference may not be so in another.

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†This paper is an expanded and modified version of the paper read at the Graduate Colloquium on Philosophy of Science, held in October, 1977, at the University of Waterloo, Canada.

‡See part II of this paper for some clarificatory and other relevant details.

Developing the implications of the above assumptions mathematically the following two equations are obtained<sup>a</sup> :

$$(A) \quad x' = \frac{x - vt}{\sqrt{1 - v^2/c^2}}$$

$$(B) \quad t' = \frac{t - vx/c^2}{\sqrt{1 - v^2/c^2}} \text{ and } y = y', z = z'$$

Where  $x, y, z, t$  are the space-time coordinate values in  $S$  while  $x', y', z', t'$  are the corresponding values in  $S'$ .

[ As we let  $c \rightarrow \infty$  in (A) and (B) above we see that  $|x' - x|$  and  $|t' - t|$  tend to 0. Consequently, the relativistic frame would be identical with the absolute Galilean frame if there were a means of sending with infinite velocity. Clearly, this assumption violates one of the requirements of the STR and is in fact equivalent to postulating an absolute frame of reference, e.g., the all pervading motionless ether. ]

Now, on the basis of what has been said so far, we are logically entitled to hold that (i) once we accept the basic postulates of the view that the notion of *absolute* simultaneity has any physical significance, the time-lapse  $\Delta t$  between any two events, say,  $E_1$  and  $E_2$ , as measured from two different frames of reference  $S$  and  $S'$ , will be different. Thus if  $\Delta t$  and  $\Delta t'$  represent the time-lapse between  $E_1$  and  $E_2$  as measured from  $S$  and  $S'$  respectively then according to the STR  $\Delta t \neq \Delta t'$ .

Further, if we assume that  $S$  is stationary and  $S'$  is moving uniformly relatively to  $S$  then according to the STR  $\Delta t$  and  $\Delta t'$  are related by the following equation :

$$\Delta t' = \frac{\Delta t}{\sqrt{1 - (v^2/c^2)}}$$

Now, if we let  $v$  approach  $c$  as a limit in the above equation we find that  $\Delta t' \rightarrow \infty$ . If we choose a value of  $v$  so that  $\sqrt{1 - (v^2/c^2)} = .01$  then  $\Delta t' = \Delta t \times 100$ . Interpreted in a straightforward way, this means that the 'flow' of time is hundred times 'faster' in the stationary frame  $S$  relatively to the moving frame  $S'$  i.e.; a lapse of one year in  $S'$  would correspond to a lapse of a hundred years in  $S$ . As we have already remarked, one of the necessary conditions for the STR to logically entail the pheno-

menon of 'time-dilation' in the moving frame of reference is to deny any *physical* significance to the notion of *absolute* simultaneity. However, in order to deny any physical significance to 'absolute simultaneity' the STR is obliged to make the notion of 'absolute velocity' equally devoid of any physical significance. Consequently, instead of saying that S' is moving with a velocity  $v$  relatively to S we could equally justifiably assert that S is moving with a velocity  $-v^*$  relatively to S'. Thus from a purely mathematical point of view (in accordance with the STR) there is nothing *absolute* to distinguish between S and S' and consequently nothing which can enable us to regard  $\Delta t$  as more *fundamental* (i.e., a better representation of reality) than  $\Delta t'$  or vice-versa. This lands us directly into the so-called twin paradox.

Suppose, A and B are twins and B begins a round-trip rocket journey into the space with a velocity  $v = 259,807$  Km/Sec., while A remains stationary on earth. A simple calculation will show that when B comes back and meets A again two centuries would have passed on earth while only two years would have elapsed according to B's calculation. Thus during the voyage B will grow only two years older. And this is already a paradox, but the worse is yet to come.

Since, according to the STR, there is no *absolute* velocity, hence instead of regarding B as moving with a velocity  $v$  relatively to A we might as well say that A is moving with a velocity  $-v$  relatively to B. If this is granted then  $\Delta t$  and  $\Delta t'$  would interchange their values and we would be equally justified in claiming that the time lapse for A is two years while the corresponding lapse is 200 years for B.

Now, if we grant all the assumptions of STR then the equation relating  $\Delta t$  and  $\Delta t'$  is mathematically impeccable and is a logical consequence of those assumptions. Yet we cannot accept any theory as tenable if it entails some absurdity. What can be a possible way out of this impasse?

One possible move would be to deny any ontological status to temporality or time-lapse. If time is static and does not flow, i.e., the universe is a '*totum simul*' spread out in a four-dimensional Space-Time, then both  $\Delta t$  and  $\Delta t'$  would be *vacuous* and hence  $\Delta t > \Delta t'$  and  $\Delta t < \Delta t'$  would both be true (just as the modern theory of quantification entails that 'All men are mortal' and 'No men are mortal' can be simultaneously true so long as the class of human beings is empty).

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\*The negative sign indicates that the velocity is in the opposite direction of  $v$ .



Actually, no less a person than K. Goedel adopted this alternative I

"In short, it seems that one obtains an unequivocal support of the views of those philosophers who, like Parmenides, Kant and the modern idealists, deny the objectivity of change and consider change as an illusion or appearance due to our special mode of perception."<sup>4</sup>

A second approach, adopted by Bergson in his Critique of the STR, is to adopt the so-called time-dilations as implied by the STR as merely '*perspectival*' rather than *real*. "In the theory of relativity, the slowing of clocks is only as the shrinking of objects by distance..... Just as upon reaching a distant object we see it in its true size and then see it shrink as we move away from the object we have just left, so the physicist, going from system to system, will always find the same real time in the system in which he installs himself and which by that very fact he immobilizes, but will always, in keeping with the perspective of relativity, have to attribute more or less slowed times to the systems he vacates and which by that very fact, he sets in motion at greater or lesser speed .. .... Now if I reasoned about someone far away.....as about a genuine midget, I would end in paradoxes and contradictions... No less paradoxical will be the results if I give to the wholly ideal phantasmal clock that tells time in the moving system in the perspective of relativity, the status of a *real* clock telling this time to a real observer."<sup>5</sup>

Afterwards, referring to a thought-experiment by way of analogy [ in this experiment Peter and Paul are the observers in the frames of reference S and S' respectively, where S' is moving uniformly with respect to S while S is supposed to remain *stationary*. ] Bergson comments : "Everything the physicist will tell us about Paul's findings on his journey will have to be understood as being about findings that the physicist Peter *attributes to* Paul when he [ Peter ] makes himself a *referer* and considers Paul no more than a referent findings that Peter is *obliged* to attribute as soon as he seeks a picture of the world that is independent of any system of reference."<sup>6</sup>

"One would recognize that the Lorentz equations quite clearly express what the measurement *attributed* to S must be in order that the physicist in S may see the physicist *imagined by him* in S', finding the same speed for light as he does,"<sup>7</sup>

This apparently naive and abysmally metaphysical objection of Bergson is not really so innocuous. His cautious choice of expressions particularly '*obliged to attribute to*,' '*imagined by him*' etc., [ see the italicized parts in the above quotations. ] is indicative of that. What

he intends to say, expressed in technical jargon is roughly this :

- (i) If the principle of relativity holds and
- (ii) the velocity of light  $c$  is assumed to be a constant and the same in all frames of reference, then granted
- (iii) the relativistic definition of simultaneity in terms of coincident light-rays, the measured values of time in  $S$  and  $S'$ , say,  $\Delta t$  and  $\Delta t'$  *must* be different.

Now, the question is what kind of relation  $R$  holds between  $t$  and  $t'$  so that the following conditions are satisfied :

- ( $\alpha$ )  $R$  is formally *consistent* with (i) and (ii) above.
- ( $\beta$ )  $R$  is mathematically the *simplest*, and
- ( $\gamma$ )  $R$  preserves the invariance of space-time interval between two events in any frame of reference—i.e.,  $R$  is *interval-invariant*.

If requirement ( $\alpha$ ) were dropped and there were no upper limit for  $c$  then we would get the absolute space and time of Newtonian physics. If ( $\beta$ ) could be dropped then  $R$  could be any one of the other abstractly possible non-linear transformations. On the other hand if ( $\gamma$ ) were to be ignored then  $R$  would *not* be interval-invariant, although we would be free [ mathematically ] to choose a *non-orthogonal* transformation for  $R$ .

Hence, granted the requirements ( $\alpha$ ) ( $\beta$ ) and ( $\gamma$ ) the question arises if the space and time measures in  $S$  and  $S'$  can be related by a *linear, orthogonal* transformation. In fact, the Lorentz-transformation just happens to be of the required type.

Thus a physicist, according to Bergson, in abiding by the rules of the STR chooses to play a formal game, the rules of which '*oblige him to attribute*' a different value to the time-measures in  $S'$  when viewed from his own frame of reference  $S$ , which is *by hypothesis stationary*. Hence the STR represents a splendid move, so far as formal elegance is concerned, but it is by no means the *only* possible move and should not be considered as providing an x-ray photograph of the heart of the reality.

On the above approach the twin-paradox is not a paradox to be solved, but it is one to be dissolved—but if so, then the STR can get rid of its paradoxical implications only at the cost of abandoning its claim for giving a deep metaphysical insight about the nature and reality of space and time.

Clearly, for some enthusiastic supporters of the view that the STR does have deep metaphysical implications for the ontology of Space and Time, Bergson's critique was not very palatable. Now, the only way to undercut the force of Bergson's analysis of the 'paradox' was to show that the analysis involved some untenable assumptions.

The *assumed* absolute *symmetry* between S and S' was the pivot of Bergson's critique. Hence, it was claimed that, the assumption of absolute symmetry between two relatively moving frames of reference S and S', is *physically* untenable, though not logically untenable or inconsistent with Einstein's assumptions.

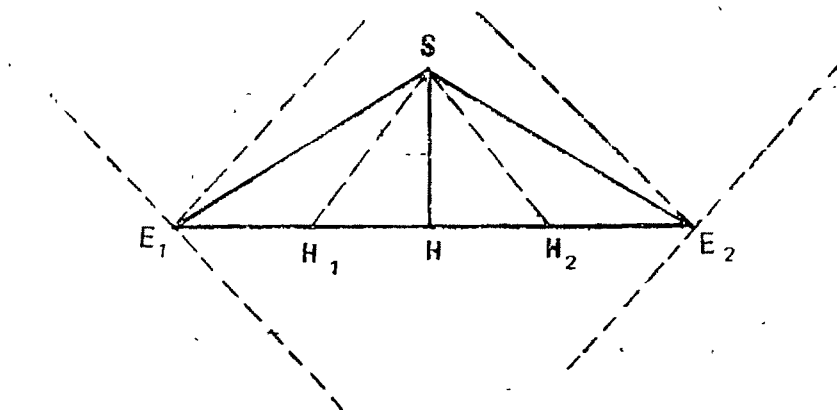
Thus it was urged that although A's uniformly moving with a velocity  $v$  relatively to B is equivalent to B's moving with a uniform velocity  $-v$  relatively to A, from a purely kinematic point of view, yet the two are *not* equivalent or symmetric from a dynamical point of view. Therefore, for no two observers can  $\Delta t$  and  $\Delta t'$  symmetrically interchange their values and hence, strictly speaking, the paradoxical situation, though *abstractly* possible, can never actually occur.

As a matter of fact this is the approach taken by H. Reichenbach<sup>6</sup> to avoid the paradox.

[ We shall critically examine the presuppositions and implications of Reichenbach's reply later in this paper. ]

Another ingenuous and distinct approach to explain the paradox was adopted by A. N. Whitehead, the basic point of which can be summed up thus :

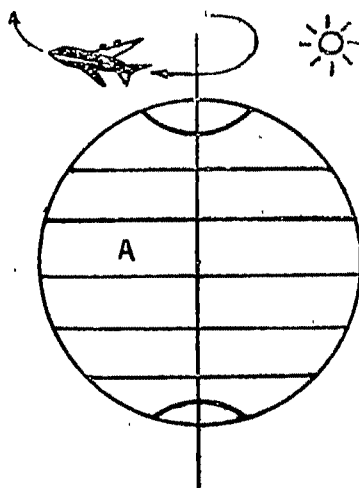
Suppose two observers O and O' in systems S and S' respectively ( S' moving relatively to S ), on measuring a certain time-lapse, say  $t^*$ , as  $\Delta t$  and  $\Delta t'$  respectively come to the conclusion that  $\Delta t \neq \Delta t'$ . This discrepancy is *not* due to the fact that the *real* time has shrunk or dilated in any way. It is rather due to some physical restrictions and the adoption of a special definition of 'synchronicity of events' that O' misses *count* of a chunk of time and the passage of time seems slower to him. Whitehead makes his position clear with the help of a diagram,



$E_1 E_2$  is the time-axis for the Earth,  $E_1 S$  for the traveller on his outward journey,  $SE_2$  for the traveller on his return journey. The dotted lines are moments of simultaneity according to the various space-time systems, and are therefore diagrammatically symbolical of instantaneous three-dimensional spaces; SH is the moment of simultaneity (according to Earth-reckoning) of the arrival at the star and the corresponding Earth-instant (H). Thus,  $E_1 H$  comprises 36,500 revolutions of the Earth.

Again  $SH_1$  is the moment of simultaneity (according to the outward traveller's reckoning) of the arrival at the star and the corresponding Earth-instant ( $H_1$ ). Thus  $E_1 H_1$  comprises 3.65 revolutions of the earth, which the traveller has counted. When the traveller at once starts to return, he changes his moment of simultaneity to  $SH_2$ , to correspond to this new meaning of himself as at rest; and he counts the 3.65 revolutions comprised in the portion  $H_2 E_2$  of the Earth's time axis. In the flurry of an instantaneous change of motion at S, the traveller dropped out of account, the 72,992.7 revolutions between  $H_1$  and  $H_2$ . If he had noticed them, he would have counted them; and would then have agreed with the Earth chronologer on his return.

According to this diagram the time-lapse as measured by O and O'differ because as a consequence of the 'denial of simultaneity as fundamental fact of experience' the *meaning* of and the *criterion* for *measuring* the time-lapse differ for the two observers. 'There seems, therefore, to be no *meaning* in the assertion of the two successive clock-days. Still less can there be any meaning ascribable to this mode of comparison of the days registered by two clocks which are whizzing past each other with a velocity not far short of that of light"<sup>10</sup> An analogy might be helpful at this point.



Suppose, the earth is moving on its axis and an observer stationed at A on earth's surface is keeping track of time by counting the number of days elapsed [which is defined as the number of sunrises observed from A.]. Let us also suppose that another observer starts circling round the earth in a jet plane in the direction of the arrow with a velocity  $9/10$ th of the angular velocity  $v$  of the earth. The observer in the jet, let us call him A', also agrees to keep track of time by counting the number sun-rises sighted by him. We further assume that A' has no other criterion for reckoning time and has no means of communication with the observer at A. Now, since A' will lag behind the earth by  $1/10$ th of  $v$  for each earthly-day, he will see one complete revolution of earth in each 10 days and consequently will count one—when by A's clock the time elapsed is ten days. So, *in a sense*, in the moving frame A', time will pass slowly. But where were the nine-days of A' lost? The answer is: nothing was ever lost and by the accepted common criterion of measuring time both were 'correct'. But although there is a mathematical relation holding between the measure of time in A and A' so that we can always calculate the value of  $\Delta t_A$ , from that of  $\Delta t_{A'}$  and vice versa, yet that would not leave the *measured* values of the lapse of time undistorted i.e., would not be metric-invariant.

The implication of Whitehead's [viewed from this stand-point] then is that the equation relating  $\Delta t$  with  $\Delta t'$  in the STR instead of entailing any *real* dilation of time, signifies that since the scale used for metricizing time is continuous, any two time-lapses e.g.,  $\Delta t$  and  $\Delta t'$  can always be mapped one-to-one and the formulae can be considered as a kind of such mapping-function under the special assumptions of the STR. <sup>14</sup>

Thus if either Bergson's or Whitehead's interpretation is accepted, then the 'paradox' disappears but so does the rationale for the claim of metaphysical profundity of the STR. Hence, leaving them aside, we shall concentrate on Reichenbach's and Goedel's views in order to ascertain whether and how far, if at all, the metaphysical consequences *imputed* by them to the STR are *logically* implied by it.

We shall consider Reichenbach's view first. As I have pointed out according to Reichenbach, a paradoxical situation is *physically* impossible to occur. But why? Let us quote his own words: "We can therefore say: if a clock U is first moved away from  $U_1$  and then returned, it will be slow relatively to  $H_1$ . It seems that according

to the theory of relativity the process can be interpreted in the opposite manner. We consider  $U'$  to be at rest, while  $U_1$  is moved (to the left) and then returned. On the basis of this description we should conclude that  $U_1$  is slow relative to  $U'$ , since  $U_1$  is the moved clock. . . . . Only one of these assertions can be correct.

The contradiction is quite striking and may under no circumstances be solved by considering the following two statements [ viz., when brought together  $U'$  is slow relative to  $U_1$  and also  $U_1$  is slow relative to  $U'$  ]. A solution can be given only if we can show that one of the apparently equally correct inferences is incorrect\*. In fact it is the second one. The error lies in a misconception of relativity, which can be explained as follows. The theory of gravitation shows that the special theory of relativity is *applicable only because* the distant masses of the fixed stars determine a particular metrical field. If we take account of the masses of the fixed stars  $F$ , the apparent equivalence of the two interpretations vanishes".<sup>12</sup> [ cp. Einstein's GTR solution below. ]

The crux of the above counter argument against the paradoxical implications of the STR is in the *denial* of the 'symmetry' of the *operation* which might be called 'interchanging the frames of reference'. But this denial is *not* based on *logical* ground but firstly, on a contingent empirical fact viz., there are more than two interacting material bodies in the universe and *secondly*, on a theoretical commitment viz., faith in the truth of the GTR. Clearly, such a faith is non justified though *not* unjustified.

If our analysis is correct then Reichenbach's defence against the said paradox must be ineffective because from a merely contingent or physical impossibility of such a paradoxical situation it does *not* follow that such a paradox is *not logically implied* by the STR.

However, the alleged asymmetry [ on which Reichenbach's solution depends ] of the operation called interchanging the frames of reference would be guaranteed provided we grant that the GTR is true *and* the universe has more than two material bodies. In that case the STR would *logically* fail to imply the paradox and Reichenbach's solution would be acceptable. But at the same time that would also make it evident that once the paradox is admitted as genuine [ as Reichenbach does as opposed to Bergson ] there is nothing *in* the STR itself that can prevent it from being plagued by the paradox. Now, once we grant that such a paradox is logically implied by the STR, the only way to save the theory would be to

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\*This is equivalent to introducing an **asymmetry** in the situation and thereby implicitly stipulating one of the reference coordinates as the base system.

subscribe to some kind of metaphysical view implying the unreality of time or denying any ontological status to the passage of time as Goedel and some other thinkers have done.

So finally, we are left with the Goedelian interpretation of the metaphysical implications of the STR. This is the view that we are now going to assess critically.

With reference to the 'paradoxes' implied by the STR, Goedel remarks: "Following up the consequences of this strange state of affairs one is led to conclusions about the nature of time which are very far-reaching indeed."

He then asserts that these consequences of the STR lend *unequivocal* support to the metaphysical views held by Parmenides, Kant and the modern idealist philosophers regarding the nature and reality of Time. Then after implicitly criticizing Reichenbach's view he continues: <sup>13</sup>

"[ Now in all cosmological solutions of the gravitational equations (i.e., in all possible universes) known at present the local times of all *these* observers fit together into one world time, so that apparently it becomes possible to consider this time as the 'true' one, which lapses objectively, whereas the discrepancies of the measuring results of other observers from this time may be conceived as due to the influence which a motion relative to the mean state of motion of matter has on the measuring processes and physical processes in general.

From this state of affairs, in view of the fact that some of the known cosmological solutions seem to represent our world correctly, James Jeans has concluded that there is no reason to abandon the intuitive idea of an absolute time lapsing objectively. I do not think that the situation justifies this conclusion and am basing my opinion chiefly on the following facts and considerations:

There exist cosmological solutions of another kind than those known at present, to which the aforementioned procedure of defining an absolute time is not applicable, because the local times of the special observers used above cannot be fitted together into one world time. Nor can any other procedure which would accomplish this purpose exist for them, i.e., these worlds possess such properties of symmetry, that for each possible concept of simultaneity and succession there exist others which cannot be distinguished from it by any intrinsic properties, but only by reference to individual objects, such as, e.g., a particular galactic system.

Consequently, the inference drawn above as to the non-objectivity of change doubtless applies at least in these worlds. Moreover, it

turns out that temporal conditions in these universes show other surprising features, strengthening further the idealistic viewpoint. Namely, by making a round trip on a rocket ship in a sufficiently wide curve, it is possible in these worlds to travel into any region of the past, present, and future, and back again, exactly as it is possible in other worlds to travel to distant parts of space.

This state of affairs seems to imply an absurdity. For it enables one e.g., to travel into the near past of those places where he has himself lived. There he would find a person who would be himself at some earlier period of his life. Now he could do something to this person which, by his memory, he knows has not happened to him. This and similar contradictions, however, in order to prove the impossibility of the worlds under consideration, presuppose the actual feasibility of the journey into one's own past. But the velocities which would be necessary in order to complete the voyage in a reasonable length of time are far beyond everything that can be expected ever to become a practical possibility. Therefore it cannot be excluded *a priori*, on the ground of the argument given that the space-time structure of the real world is of the type described." ]

Besides Goedel some more recent writers e.g., D. Park (The Myth of the Passage of Time in (17)), D. Williams (Journal of Philosophy—1951, The Myth of Passage) and Quine (Word and Object: P. 172) seem favourably inclined to the Goedelian interpretation of the STR. A. Gruenbaum's comment viz., "coming into being is only coming into awareness" is often [and I think mistakenly] regarded as a justificatory evidence for classifying Gruenbaum's view into the same category as upheld by Goedel and other supporters of the static view of time.

Gruenbaum would agree, at least verbally, with Costa de Beauregard<sup>14</sup> in holding that there is no *real* becoming in the world and "matter is displayed statically in space-time" in a "becomingless world".

How are we to explain then the experience of becoming that we have? The answer would be somewhat like this: The tapestry is already woven throughout its full extent, both in space and in time, so that the whole picture exists. What we call change is really a *series of perspectives* revealed to our consciousness depending upon the position it occupies in the four-dimensional world of space-time. Or as Minkowski puts it: "the motion of a point in time is represented as a *stationary curve in four-dimensional space*. Now if all motional phenomena are looked at from this point of view they become time-less phenomena in four-dimensional space. The



whole history of a physical system is laid out as a *changeless* whole." "There is no difference between time and space except that our consciousness moves along it." 16

Just how meaningful a view of this type can be? In what sense or to what degree can such a metaphysically loaded view be logically implied by a physical theory like the STR? These are the two main questions before us at this point.

It seems obvious that no adequate and consistent formulation that denies the objectivity of time is possible within our *existing conceptuo-linguistic frame-work*, because all the metaphors used to express such a view e.g., '*series* of perspectives', '*movement* of the consciousness along the world line', '*successive* positions occupied by the consciousness in four-dimensional space-time' or even that of 'the history of the world as being *already* there spread out in space-time' presuppose the meaningfulness of one temporal expression of another. Consequently, by trying to deny the significance of the temporal concepts by *using* those very concepts any such theory must violate the basic requirements of linguistic usage. Thus referring to Jean's formulation of the static interpretation of Time, P. Frank comments: "Words are here combined according to formation rules contradicting the syntax of every scientific language. The jump into metaphysics has been made. This can easily be shown. For what, in Jean's word '*already* woven' mean? In ordinary syntax '*already*' means, sentence, do the in such a context, the same as '*at an earlier time*'. ..... 'The four dimensional continuum subsists at a certain time-point' is a *meaningless* word combination, ..... And '*already* woven in space and time' is only another formulation of this meaningless word combination." 16

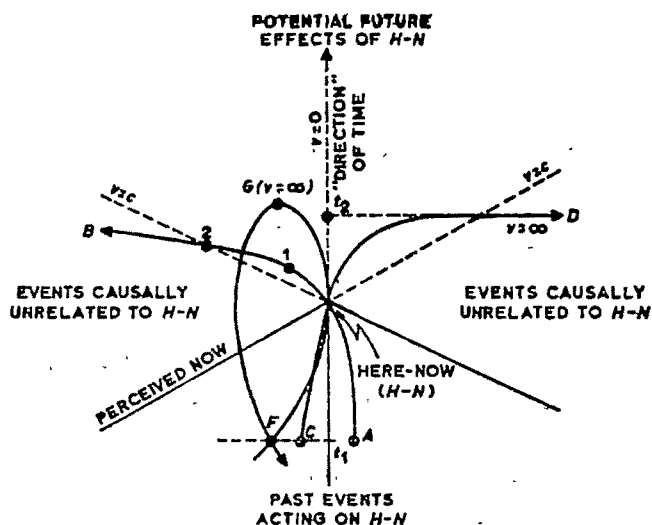
One way of *avoiding* (but surely not of overcoming) this difficulty is to take refuge to some kind of mysticism and claim that it is the fault or inadequacy of our ordinary conceptuo-linguistic frame-work that we cannot consistently express deeper truths involving the unreality of time. Such a move would be similar to Heidegger's who, on seeing that his talks about the 'Nothing' are self-contradictory by the accepted criteria of logic bravely proclaimed that 'so much the worse for logic'.

[To me it seems that it is not just an accidental coincidence that the metaphysicians who denied any ontological status to time either leaned towards mysticism (cp., some of the Upanisadic, Buddhist and Vedantic systems) or at least implicitly, proclaimed the inadequacy of our ordinary conceptuo-linguistic frame-work e.g.,

Kant's thing-in-itself as 'unknown and unknowable', Bradley's 'Absolute in which all contradictions rest peacefully being 'transformed' and 'transmuted' 'somehow' — the 'how' of which is too deep for human intellect to fathom etc ]

So much about the intelligibility of the 'static' view of time. How about its logical connection with the STR ?

As we have already seen, according to Goedel, it is mathematically possible to construct cosmological models in which not only any finite time-lapse becomes zero, but also the time-order can be *reversed* and one and the same thing can be both *before* and *after* itself. The kind of world-lines that would represent such possibilities were clearly portrayed by Costa de Beauregard in a space-time diagram which we shall use here to illustrate our objections.



*Three impossible world lines.* The diagram above, which is an elaboration of Figure I in Costa de Beauregard's essay, depicts three world lines, that is, four dimensional orbits, whose existence is excluded by the limiting character of the velocity of light. They represent bodies moving in H-N ('he're-now') with the admissible velocity  $v<c$ ; but all of them would acquire eventually a velocity  $v>c$ . A body moving along the world line A-(H-N)-B would acquire it beyond the point event 1; at the point 2 it would overtake the photon emitted from H-N and would enter the 'elsewhere' region (see Costa de Beauregard, Figure 2). This would mean that an observer in the elsewhere region, contemporary in the relativistic sense with H-N, would perceive the signal from an event future

with respect to H-N. The world line C-(H-N)-D is the world line of a body, or of a signal, moving eventually with infinite velocity. It would be equivalent to the realization of the Newtonian instantaneous space at time  $t_2$ . The third trajectory could be called a 'Goedel line', after the distinguished mathematician Goedel, who adduced the possibility of certain cosmological models in which such travel may be formally permissible. Moving along this line would require that a body reach infinite velocity at point G, would turn backwards and, after crossing the region of events causally unrelated to H-N, that is the 'else-where' region, it would enter the region of 'absolute past'. Absolute, that is, with respect to H-N and all events causally subsequent to it. Leaving point event G, the body would eventually cross itself at time  $t_1$ . The point of intersection, F, would represent an event both successive to and simultaneous with itself. In causal terms this would be an event affected by its own future effects.

Clearly the world lines 1 & 2 would depict actual facts about 'Time' if  $v = \infty$  whereas the Goedel line requires besides infinite velocity, the possibility of instantaneous change of direction from  $+\infty$  to  $-\infty$  without any decrease in the value of  $v$ . The Goedel curve has to be discontinuous at point G. On physical interpretation this would imply that an object moving along this curve would *momentarily* go out of existence at G and then *re-emerge* at some point on the other side of G on the Goedel curve. However, it is difficult to see what 'momentarily' or 're-emerge' might mean in such a context.

Moreover, since all the three world lines presuppose that  $v = \infty$ , all three 'possibilities' are logically *impossible* if the postulates of the STR are true. Thus the reversibility of temporal order is possible only if one of the postulates of the STR is *denied*, but in that case reversibility of time would not be a consequence of the STR but of a theory which is *inconsistent* with the STR. Therefore, *under the assumptions* of STR at most the time-metric is variant but the time-order must be invariant.

Thus we see that the alleged Goedelian implications are not, strictly speaking, the consequences of the STR at all.

Is the somewhat weaker but related claim viz., though the STR implies that '*becoming*' has no objective significance, yet that does *not* commit us to the *static* interpretation of Time in Goedel's sense, more tenable? A Gruenbaum holds that it is.

To make his position clear, he distinguishes between the *anisotropy* of time and, temporal becoming, and points out that anisotropy is a *logical* relation between the instants of time whereas temporal becoming is a *mind-dependent* notion. Unidirectional irreversible flow of time would imply anisotropy but anisotropy by itself does not imply 'temporal becoming' or 'flow of time'.

"My characterization of *present* happening or occurring *now* is intended to *deny* that belonging to the present is a physical attribute of a physical event E which is *independent* of any *judgmental awareness* of the occurrence of either E itself or of another event simultaneous with it. .... A *physical* event like an explosion can qualify as *now* at some time t only *derivatively* in one of the following two ways: (a) it is necessary that someone's *experience* of the physical event does so qualify, or, (b) if unperceived, the physical event must be simultaneous with another physical event that does so qualify in the derivative sense indicated under (a)." <sup>17</sup>

"To assert that now-ness and thereby past-ness and futurity are mind-dependent is surely *not* to assert that the earlier-later relations between events of a world-line are mind dependent, let alone hallucinatory ..... In this way the thesis of mind-dependence is misrepresented as entailing that all events happen simultaneously or form a '*totum simul*'. But it is an egregious blunder to think that if the time of physics lacks *passage* in the sense of there not being a transient now, then physical events cannot be temporally separated but must all be simultaneous." <sup>18</sup>

Gruenbaum then goes on to criticize Whitrow. Referring to Whitrow's allegations against H. Weyl's denial of physical becoming, he says: "Hence it is wrong to identify Weyl's denial of physical becoming with the pseudo-image of the 'block-universe' and then to charge his denial with entailing the absurdity that all events are simultaneous. Thus Whitrow says erroneously: "The theory of 'the block-universe' ..... implies that past (and future) events coexist with those that are present." <sup>19</sup>

He then tries to further clarify his position with the following quotation from J.J.C. Smart: "The tense-less way of talking does not therefore imply that physical things or events are eternal in the way in which the number 7 is" and concludes that we must reject Whitrow's odd claim that "external events *permanently* exist and we merely come across them".

So what Gruenbaum's proposed *exclusion* of 'becoming' from

physical world really amounts to is the much less radical claim that in all purely physical (i.e., non-subjective or non-psychological) contexts it is possible to express every *tensed* statement in a corresponding de-tensed form (i.e., without using verbs in past or future tense) without any loss of meaning-content.

There is an obvious sense in which what Gruenbaum says about the mind dependence of becoming is true. But in that sense what he in effect does is tantamount to stepping into Russell's shoes and then echoing Kant. What I mean is this: Gruenbaum, in working out his view, follows the lead given in Russell's paper\* and reemphasizes (although in a different jargon) what Kant in effect said with regard to the 'threefold synthesis' as a precondition of events as well.

Thus it is only through a sort of queer concept-manipulation that Gruenbaum can allow us to deny the objectivity of becoming without accepting the unreality of time.

This feat looks almost as impressive as the ability to eat a cake and have it at the same time so long as we fail to see through the trick.

## II

We have already seen that one of the postulate of STR is the denial of any absolute frame of reference. This means that there can be no *preferred* or *base* system of coordinates. From this postulate it follows that from a purely abstract point of view there is a perfect *symmetry* between S and S' which are moving relatively to each other. We can regard either S as in rest and the S' moving relatively to it with a velocity  $v$  or vice-versa and still get internally *consistent* results about the time-measures in S and S' using Lorentz-transformation. Thus although the internal time-measures of S and S' differ yet none is any less correct than the other. This, in a nutshell, is the heart of the so-called twin paradox. Now, clearly, since the symmetry-condition is the *basis* of the paradox, it can be avoided if it can be shown that the symmetry-condition does *not in fact* hold between S and S' and consequently *both* the twins cannot legitimately claim that the *other* has aged more—only one of them will be right and the other wrong.

We shall now discuss some of the more recent discussions of the paradox and show that *all* of them try to avoid the paradox by somehow (implicitly or explicitly) introducing asymmetry into the

situation. We shall now list the various alternative approaches to the twin paradox in a tabular form :

#### TWIN PARADOX (Proposed Solutions)

1) The Paradox can't arise because the symmetry requirement must fail.	2) The Paradox does not arise because we <i>do</i> have a base system of reference e.g., aether.	3) The Paradox can be completely solved within the framework of the GTR.	4) The Paradox is unavoidable and leads to Goedelian conclusions.
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An overwhelming majority of physicist opt for (1). For example, A. P. French :<sup>20</sup> "But is it not possible to regard B as the traveller and A as the stay-at-home? No ! Why not? Because there isn't *symmetry* between the two. Event 2 [ i.e., when A suddenly reverses his velocity ] is the decisive one. During it, A switches from one inertial frame to another, while nothing at all happens to B. At his turn around A experiences an acceleration that he can detect by various means." What this amounts to is to admit that although the discrepancy of time measure ( on which the so-called paradox depends ) is entailed by the STR yet it does not really give rise to any paradox because the symmetry condition cannot be fulfilled. However, there is a conceivable way in which observers in S and S' may meet each other after time-travel *without* changing their respective inertial frames. For example, if Space is non-Euclidean and positively curved ( as Einstein himself held ) so that the universe is finite ( though unbounded ) then to move along a 'straight line' in such a space would be to move in a '*geodesic*' which, if continued indefinitely, would bring the rockets to their original point of departure. In that case the symmetry condition would not be violated and the problem will remain. [ More on this when we discuss the GTR solution below. ]

Alternative (2) has also been adopted by many physicists to solve the paradox. F. S. Crawford, claims that the 'accepted' solution of the twin paradox ( a solution in which one twin is found *unambiguously* to age more rapidly than the other ) does rest on reference to a *third* body as the matter in the remainder of the universe or the distant galaxies. Similarly G. Builder argues for an aether as a *preferred* frame or *base* system to solve the paradox ( Austral. J of Physics—1958 ). Clearly, Builder's solution 'solves' the paradox of

STR by rejecting the 'principle of relativity' itself and hence, strictly speaking, does not really touch the issue.

The general relativity solution ( GTR solution for short ) accepts the time dilation result from STR but also takes into account the hypothetical forces acting on the moving system during acceleration. These forces, as is well known, are equivalent to gravitational field according to GTR. It is a consequence of the GTR that the periods  $\tau_1$  and  $\tau_2$  of two clocks situated in regions of different gravitational potential will be related by the equation :

$$\tau_2 = \tau_1 ( 1 + \Delta V/c^2 ).$$

[ where  $\tau_2$  is the longer period of the clock at the lower gravitational potential,  $\Delta V$  is the difference in potential. ]

On the basis of the above equation *plus* the assumption that the gravitational field extends *linearly* from S to S', the GTR solution shows that observers in S and S' will have non-discrepant time-measures ( when due consideration is given to other relativistic effects. )

Obviously, the GTR solution is a mathematically more complex attempt to justify the introduction of *asymmetry* into the situation to solve the paradox. As Schlegel remarks : "The general relativity solution .... is a highly contrived one which can readily be criticized... .. the existence of such a [ linearly extended ] gravitational field is in no way physically justified." Moreover, it is *not* a solution *within* the framework of STR and further even Einstein himself did not, in his later years, regard the GTR solution to be of significance and is reported to have made definite assertion that general relativity has nothing to do with the clock paradox. [ See Schlegel - p. 124 ]. So we do not discuss it further here.

This leaves us with alternative (4) viz., to deny that Space and Time have any objective reality and hence, the paradox, like Time itself, is unreal. We have already critically discussed this view. Only one point needs to be emphasized here.

The STR, as we know, starts from the assumption of the constancy of the velocity of light c. Given this, it can be shown mathematically that, the transformation equations relating x and t to x' and t' respectively, are the *hyperbolic* functions which keep the *interval* between two events *invariant* in every frame so that  $x^2 - c^2 t^2 = (x')^2 - (c't')^2$  holds.

What really happens is this : as we move from the Galelian frame to the relativistic frame (or vice versa) both space-measure and

time-measure *fail to be metric-invariant* under mapping from one coordinate system to another. It has nothing to do with *real* warping of space or time. Consequently, Goedelian conclusions become simply *non-sequiter*, unless we *equate* (unjustifiably) *measure* of space (or time) with the *nature* (or ontology) of space (or time).<sup>22</sup>

After having critically surveyed the various approaches to the STR paradox and its alleged metaphysical consequences we may now briefly indicate how we propose to look at it. Obviously our approach is somewhat different from all the four major types of approach mentioned above. Looking historically at the intellectual climate of the early twentieth century (when the STR was developed) will help us to make some finer points of difference between our approach and the others clearer.

Operationalistic positivism was the official philosophy dominating the scientific circle. According to such a view, the 'real' is whatever is empirically observable. In other words, all talks about the unobservables (and hence unverifiable) are meaningless. Hence, space and time *per se*, being unobservables, cannot be admitted as reals in science. Moreover, all that science requires and can empirically verify are the various *measures* of space and time. The notion of a measurement-independent absolute space-time would be a meaningless metaphysical fiction unless there is a fixed universal frame of reference, e.g., the classical aether, or there is a signal propagable with infinite velocity. The STR dispenses with both these alternatives on grounds of simplicity and conceptual elegance. [ Although this does not mean that they cannot be retained in a respectable scheme of scientific explanation by some suitable modification in other parts of our conceptual frame-work. ] Consequently, granted the STR-assumptions and positivistic philosophy, it is only time-as-measured [ in accordance with the criterion of measurement specified by the STR ] that can be treated as 'real'. The same holds for space. It follows that the magnitude of time-lapse between two events is not an absolute quantity but depends on the observer's frame of reference. It now seems very natural that the relative-time-measure for an event E may be one year for  $O_1$  but, say, one hundred years for  $O_2$  and yet both may be correct. There is no paradox in it any more than when we say that 'x is to the left of y' and also 'y is to the left of x' (both objectively), provided we remember that 'to-the-left-of' is not an absolute property of the objects but depends on the orientation of the observer.



In fact, if one strictly follows the consequences of positivism then the twin paradox does not even look like a paradox. Why did so many competent thinkers, including Einstein himself, attach so much importance to the so-called paradox? What do the various attempts to 'solve' it indicate? I believe that a conceptual ambivalence due to a commitment to the intuitive notion of objective time on the one hand and the observer-relative measured time on the other; and the unwitting switch over from 'real' in the operationalistic-positivistic sense to 'real' in the intuitive absolute sense that accounts for it. The 'measured-times' of the twins differ and the measured time of each is 'real' in the operationalistic sense. Now it is only a step to slide from 'real' in this sense to 'real' in the absolute sense and make the 'twin-paradox' look profound.

Kurt Gödel's view pleading for the unreality of time is a clear case of such a confusion between the two senses of 'real'. The other extreme view is Bergson's. His view that the discrepant time-measures, being observer-dependent, should be treated on par with illusions is no more tenable than the claim that 'being-to-the-left-of' being observer-dependent should be counted as illusory. Similarly, those who try to solve the paradox by pointing out that the paradox can do no real harm because the symmetry condition cannot be fulfilled are also victims of the same confusion.

This becomes quite clear if we keep in mind the fact that the whole strategy of trying to 'solve' the 'paradox' by introducing asymmetry into the situation is to be able to find out a criterion whereby one of the two twins may be unambiguously said to age more rapidly than the other. But why must we choose only one of the two as correct? Because, as Reichenbach would put it, if two measures of a time lapse differ then both cannot be correct. Only one of those measures (viz; the one in the base-frame i.e., the one at rest) can be objectively real. The ambivalence of attitude due to a commitment to the measure-dependent relativistic time on the one hand and the intuitive notion of 'real' and 'objective' time lapse on the other, is obvious here. All the other asymmetry-based proposed solutions (eg. Crawford's, Schlegel's and GTR solutions) belong to this category.

It is natural to ask at this point whether the phenomena like the lengthening of the  $\mu$ -meson decay period (when they are accelerated to a velocity not far short of the velocity of light) do show that the relativistic time dilation is 'objectively real'? If so then the STR must be admitted to have significant ontological implications about the

nature of time ( as opposed to our highly positivistic measure-relative interpretation ).

We maintain however, that the ' $\mu$ -meson decay' can also be given an alternative interpretation without bringing in time-dilation. So the apprehension is unfounded.

[ Cp, My 'Language, Modelling and Theory Construction',<sup>23</sup> for details about the relation between a scientific theory and its possible physical models. ]

If our analysis of the so-called paradox is correct then the attempt to show that it is *actually* no threat to our conceptual system has no more point than assuring that the paper tiger poses no real threat to our safety because it has been put in a strong cage. Moreover, as we have argued, the symmetry-requirement cannot be excluded *a priori* by the STR and hence the paradox, if genuine, would remain.

Grunbauem's approach is very close to ours except that he insists on completely divorcing temporal ordering from the ordering of lived-time as past present and future.\*

We conclude therefore that the so called *time dilation* as entailed by the STR is nothing but a popular ( and highly misleading ) version of the mathematical fact that the *mapping* between two corresponding time measures in two relatively moving frames are *not* metric-invariant. Consequently, the STR as an abstract mathematical theory *implies* nothing about the metaphysical nature of Time (or Space).

Hence in the light of the foregoing discussion we conclude that the *alleged* metaphysical implications of STR [e.g., Goedelian Idealism] do *not* logically follow from the STR. On the other hand, whatever consequences strictly follow from the STR, considered as a purely physico-mathematical theory (as a theory of Lorentzinvariance group), can be hardly metaphysically exciting.

#### NOTES AND REFERENCES :

1. Essen, L. : *The Special Theory of Relativity : A Critical Analysis*, O.U.P., 1971.
2. Terletskii. : *Paradoxes in the Theory of Relativity*, Planum Press, 1968.
3. cp. : Einstein, A. : *Relativity : Special and General*, Crown Publishers, 1961.
4. Goedel, K. : *Albert Einstein : Philosopher-Scientist*, pp, 557-62.
5. Bergson, H. : *Duration and Simultaneity*, pp. 163-172, Bobbs-Merrill, 1965.

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\* We propose to discuss the difficulties associated with divorcing lived-time from objective time order in a separate paper. Anyway the issue is not relevant here.

6. Bergson, H. : *Ibid.*
  7. " : *Ibid.*
  8. Reichenbach, H. : *Philosophy of Space and Time*, pp. 192-194.
  9. Whitehead, A.N. : *The Interpretation of Science*, pp. 151-52 ;
- Also cp. French, A.P. : *Special Relativity*, pp. 156-7, for an alternative formulation of essentially the same point.

"Even in the face of this analysis, it may still seem strange that two clocks, each of which has been reading proper time, should be brought together at the same spot and yet exhibit disagreement. After all, the separation in space-time between starting and finishing points is an invariant, can be verified by both observers, and is purely time-like. However, the summation of elementary space-time intervals  $ds$  along an actual path is, in Hermann Bondi's words, "a route-dependent quantity".

We have always

$$ds^2 = c^2 dt^2 - dx^2 = (c^2 dt'^2 - dx'^2)$$

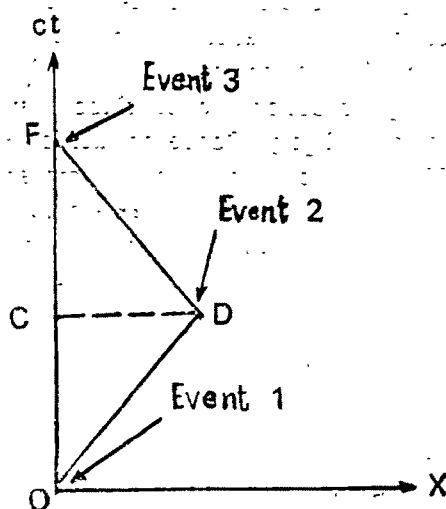


Fig. 5-12 Twin paradox.

World lines of the astronaut (ODF) and his brother (OCF) in which the astronaut goes to a distant point and back again, travelling always at constant speed except at the start (O), turnaround (D), and finish (F).

But the integral of  $ds$  along the world line OCF of the stay-at-home ( Fig. 5-12 ) is not the same as along the world-line ODF of the traveller ( both as seen in the rest frame of B ).

Along OCF,  $dx = 0$  at every stage. Therefore,

$$\int_1^3 ds = c \int_1^3 dt = c \quad (5-27)$$

Along OD,  $dx = v dt$ . Therefore,

$$\int_1^3 \frac{ds \sqrt{(c^2 - v^2)}}{\text{path OD}} = \int_1^2 \frac{dt = cT/2\gamma}{\text{path OD}}$$

Along DF,  $dx = -v dt$ , so

$$\int_2^3 \frac{ds = cT/2\gamma}{\text{path DF}}$$

also. Hence

$$\int_1^3 \frac{ds = cT/\gamma}{\text{path ODF}} \quad (5-28)$$

We see that Eqs. (5-27) and (5-28) embody the by-now-famillary asymmetry.

10. Whitehead, A.N. : "The Problem of Simultaneity", *Aristo. Soc.*, Supp., 1923.
11. Bohm, D. : *STR.*, p. 169, Fig. 30-1-essentially illustrates this point.
12. Reichenbach, H. : *Ibid.*, (7).
13. Goedel, K. : *Ibid.*, (4).
14. cp. : O. Costa de Beauregard's : Essay in 'Voice of Time', pp. 417-33., J.T. Fraser (ed.) Braziller, N.Y., 1966.
15. Capek, M. : "Time in Relativity", in J.T. Fraser(14) above, pp. 434-54.
16. Frank, P. : *Interpretations and Misinterpretations of Modern Physics.*, pp. 46-55.
17. Gruenbaum, A. : *The Meaning of Time*, pp. 196-227., Freeman & Sellars (Ed.s) ; Open Court Pub. Co., 1971., Also cp. (27).
18. " : *Ibid.*,
19. " : *Ibid.*,
20. French, A.P. : *Special Relativity*, Thomas Nelson & Sons Ltd., 1968.
21. Schlegel, R. : *Time and the Physical World*, Dover, 1968.
22. cp. : Dingle, H. : *The Special Theory of Relativity*, Methuen, 1961.

23. Sarkar, T.K. : Language Modelling and Theory Construction—pp.-50-62.  
 Proceedings of the Seminar of Philosophy and Language of Mathematical Modelling-Jadavpur University--1980.

#### OTHER REFERENCES :

1. Fraser, J.T. (ed ) : *The Study of Time*, Springer Verlag, Berlin, 1972.
2. Gruenbaum. A. : *The Philosophy of Space and Time*, Routledge & Kegan Paul, 1964.
3. Hawking, S.W. & Ellis, G.F.R. : *The Large Scale Structure of Space-Time*, Cambridge University Press, 1973.
4. Misner. C.W., Thorne, K.S., & Wheeler, J.A. (Eds.) : *Gravitation*, W. H. Freeman. 1973.
5. Nordenson, H. : *Relativity, Time and Reality*. George Allen & Unwin Ltd., 1968,
6. Rindler, W. : *Essential Relativity*, Van Nostrand Reinhold Co., 1969,
7. Rucker, R. : *Geometry, Relativity and the Fourth Dimension*, Dover, 1977,
8. Taylor, E. F. & Wheeler, J. A. : *Spacetime Physics*, W,H, Freeman, 1963,

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